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INFORMATION IN EACH OPERATIONAL AREA FOR IMPORTANT DECISIONS OF SCHOOL SUPERINTENDENTS

BY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Information in Each Operational Area for Important Decisions of School Superintendents" submitted by Roger A. Cormier in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

The main problem of this investigation was to determine the information required by school superintendents for making important decisions in major operational areas in educational administration. These areas were defined as follows: (a) students, (b) staff, (c) finance, (d) facilities, (e) curriculum, and (f) environment.

A number of characteristics of the information and of the decisions were analysed in two ways: first, independently of the operational areas and, second, within each operational area.

The study, which was exploratory and descriptive, made use of the critical incident technique. A questionnaire in which the respondents were requested to identify the most important decision made within a week and to list and describe the information required to make these decisions, was sent to superintendents of large Canadian school systems. One hundred and fifty-one questionnaires, or 61%, were retained for the analysis.

Forty-seven percent of the items of information and 49% of the decisions reported were included in the area of staff. The percentage of the items of information in the other areas ranged from 19% to 3%. The percentage distribution of decisions in each operational area was very similar to that of the items of information. On the whole, 73% of the total number of items of information were found

to belong to the same operational area as the decisions for which they were required.

Fifty-two percent of the items of information were said to be recorded either to a large or to a fair extent; 31% were not recorded at all. The staff constituted the source of information for 67% of the items. Sources of information were considered either very good or good for 90% of the items. Over 70% of the items of information were described as either very easily or easily accessible and almost 90% were said to be used either to a large or to a fair extent. Seventy-four percent of the items of the information were historical in nature and 24% were expressed in statistical form. Most of these findings appear to be in contradiction with the views advanced by information system experts.

Sixty percent of the decisions were made by the superintendents in consultation and 24% were attributed to the school boards. Seventy-three percent of the decisions were reported as having no precedent.

The information in the area of staff and, to some extent that in the area of curriculum, was recorded to a lower degree than in other areas. It was generally needed for decisions that were made mainly by superintendents and that required a longer decision-making process.

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CHAPTER I

THE PROBLEM

Introduction

Decision-making may be considered one of the major processes of administration and can be analysed from various points of view.

For instance, Campbell, Corbally and Ramseyer (1966, pp. 144-151) include decision-making as one of the five principal components of the administrative process. Decision-making is one of the sub-sections of the "Administrative Processes and Organization Variables" in the Educational Administration Abstracts, a periodical published by the University Council for Educational Administration. Simon (1957, pp. 8-11) and Cyert and March (1959, pp. 76-78) consider decision-making synonymous with administration. According to Griffiths (1959) "all other functions of administration can best be interpreted in terms of the decision-making process [pp. 74-75]."

Among the various points of view from which decision-making may be analysed, one could choose to compare group decision-making with individual decision-making (Costello and Zalkind, 1963, pp. 426-58; Saunders, Phillips and Johnson, 1966, pp. 79-84 and 95-102; Maier, 1963, pp. 1-19); or again, to view decision-making essentially as a means of resolving conflicts (Culbertson,

Jacobson and Reller, 1960, pp. 468-93). Because decision-making is sometimes equated with administration, there are many other aspects under which it could be analyzed.

In this study, decision-making is viewed primarily as a sequence of steps similar to those developed by Griffiths (1959). He divides the decision-making process in the following manner:

1. Recognize, define, and limit the problem.
2. Analyze and evaluate the problem.
3. Establish criteria or standards by which solution will be evaluated or judged as acceptable and adequate to the need.
4. Collect data.
5. Formulate and select the preferred solution or solutions. Test them in advance.
6. Put into effect the preferred solution.
   (a) Program the solution.
   (b) Control the activities in the program.
   (c) Evaluate the results and the process [p. 94].

There are many other ways in which the decision-making process may be divided. For the purposes of this investigation, it would not be profitable to enumerate the various classifications of the main steps involved in the decision-making process. As Emory and Niland (1968) point out:

> Any description of the process must necessarily be over-simplified and can serve only as a point of departure for our understanding. In actuality, the process is a confusing array of overlapping, recycling, and interlocking mental and physical efforts [p. 8].

Statement of the Problem

This study focused on one of the major steps of the decision-making process, the gathering of information, more specifically, the information requirements. Primarily, it sought to determine the information required by school superintendents for making important decisions in major operational areas in educational administration. In addition, certain characteristics of the information and of the decisions were examined. A number of demographic variables were also included in the analysis.

Importance of the Problem

The gathering of information is a component of the decision-making process which seems to be receiving more and more attention. In this regard, Dill (1964) points out that:

> It is only recently that we have begun to recognize in both theory and practice that agenda-building and search activities may have greater effects on the future of an organization than the actual choice or commitment does [p. 206].

According to Cyert and March (1963, p. 108), Eilon (1968, p. 139) and Yovits and Ernst (1967, p. 280), information is one of the most important resources in decision-making.

Trull (1966) made an analysis of various factors that influence the success of a decision in various types of organizations. He examined one hundred case examples and

found that the proximity of an optimum amount of information was one "... of the most important desiderata in decision-reaching [p. B273]."

In a study of the factors involved in decision-making, Ziegler (1964, pp. 124 and 139) found that the availability of data was among the factors that had a major influence on the decisions made by school superintendents. The collection of data was also a step in the decision-making process that warranted considerable discussion in the interviews conducted for the study.

Information is also considered as an important component of organizational life. As Katz and Kahn (1966) point out "the systematic use of information to guide organizational functioning is the sine qua non of an organization [p. 44]." According to Costello and Zalkind (1963):

> Information, relevant and available, is the very life blood of the problem-solving process. Every problem requires us to draw upon a store of information, from memory or acquired through external search. We fail to solve the problem when we don't have the information at all or when we don't have it available for use, such as, when we do not remember it or when we remember it in a non-useful way or form [pp. 378-79].

The advent of computers in business organizations may have given an impetus to the importance now given to information gathering. When computers were first introduced, they were regarded mainly as machines replacing men in lengthy calculation. Thus, they were called

"computers". Then, under the influence of the operations research group, they were used for such problems as inventory control or production. In recent years, there has been an increasing interest in the use of the computer as an information processor (Klahr and Leavitt, 1967, pp. 107-08; Shuford, 1965, p. 157). McCarthy (1966, p. 2) feels that it is now more appropriate to consider it as an information machine rather than a computing machine. The introduction of the concept of "management information system" (MIS) is also a sign of the importance now attached to the information gathering phase in decision-making. According to Cook (1968):

> it would appear that there is a rather definite trend toward increased use of information systems which can provide necessary data for decisions not only in the immediate situation but also for decisions over the long-range [pp. 13-14].

The identification of the information requirements is mentioned frequently as an important phase in the design of an information system (Alexis and Wilson, 1967, p. 314; Glaser, 1966, pp. 32-33; Head, 1967, p. 23; Li, 1968, p. 251; Sollenberger, 1967, p. 129; Sprague, 1967, pp. 55 and 70; Stern, 1967, p. B851). In this regard, Goodlad, O'Toole and Tyler (1966) recommended:

> that studies be supported that propose to set forth basic minimal data items for information processing in various aspects of education (facilities, teacher personnel, budget, students, curriculum, and so on) at several different levels (i.e., for local

> single districts, local combinations of districts, states, regions, and the nation) [p. 94].

Research Questions

This study explored the problem of information required by superintendents to make important decisions. The following research questions, which were developed after a review of the literature presented in Chapter II, guided the investigation.

Research question 1.1. What is the distribution of the items of information on the operational area scale?

Research question 2.1. What is the distribution of the items of information on each of the following scales: (a) recordation, (b) source, (c) source reliability, (d) accessibility, (e) historical, (f) statistical, and (g) utilization?

Research question 3.1. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following scales: (a) recordation, (b) source, (c) source reliability, (d) accessibility, (e) historical, (f) statistical, and (g) utilization?

Research question 4.1. What is the distribution of the decisions on each of the following scales: (a) operational area, (b) individual or group decision, and (c) precedent?

Research question 4.2. What are the mean and the standard deviation of the duration of the decision-making process?

Research question 5.1. In each operational area, what is the percentage of the items of information required to make decisions in the same area?

Research question 5.2. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following scales: (a) individual or group decision, and (b) precedent?

Research question 5.3. Are there significant differences among operational areas taken in pairs, in the mean duration of the decision-making process?

Research question 6.1. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following demographic scales concerning the superintendents: (a) method of appointment, (b) previous teaching level, and (c) previous teaching area?

Research question 6.2. Are there significant differences among operational areas taken in pairs, in the mean of any of the following demographic characteristics of superintendents: (a) age, (b) number of years associated with education, (c) number of years of experience as

superintendent, (d) number of years of experience as principal, and (e) number of years of formal education?

Research question 6.3. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following demographic scales concerning the school systems: (a) size, (b) elementary-secondary, and (c) rural-urban.

Definition of Terms

Three definitions appeared in the questionnaire: (a) decision, (b) information, and (c) data.

Decision. The term "decision" should not be confused with the expression "decision-making process". Decision is defined by Emory and Niland (1968, p. 12) as the "point of selection and commitment". This definition is implied in Griffiths' (1959, p. 94) fifth step of the decision-making phases which includes the selection of a solution or solutions.

Information and data. The term "information" may have different meanings. As Bourque (1965) points out: "Information can take a great variety of forms and is a term with a variety of definitions. It is frequently confused with terms such as data and knowledge [p. 19]." Eilon (1968) makes the following distinction between information and data:

> Information consists of data which have been measured, or appraised as good or bad and by how much, relative to a standard believed compatible with the objectives and goals of a business enterprise. Data are regarded as the raw materials from which information is produced [pp. 146-47].

Bicknell (1967) makes a similar distinction, postulating that a datum is "... a numerically expressed basic bit of information [p. 96]." The term "data", however, in this thesis, is equivalent to that used by Leu (1968, p. 23) and defined by Webster's (1966) as: "Things known or assumed; facts or figures from which conclusions can be inferred [p. 374]." The term "information", on the other hand, is defined as "data of value in decision-making". This definition, which is used by Yovits and Ernst (1967, p. 280), is similar to that used by Bourque (1965, pp. 21-22) and Blumenthal (1969, p. 30).

Other terms, used in this study, are defined as follows:

Superintendent. School superintendent or director of education.

School system. School district, county, division or unit.

Significant. Important or large.[1]

Items of information. The units of information reported by the superintendents in part IV step A of the questionnaire (Appendix A).

Distribution of items. Frequency and percentage distributions of the items.

Operational area. Any one of the following: (a) students, (b) staff, (c) finance, (d) facilities, (e) curriculum, and (f) environment.

Operational area scale.[2] Scale on which the items of information and the decisions are distributed among the six operational areas.

Recordation scale. Scale on which the items of information are distributed among the following alternatives: (a) to a large extent, (b) to a fair extent, (c) to a small extent, and (d) not at all.

Source scale. Scale on which the items of information are distributed among the following sources: (a) staff, (b) community, (c) environment, and (d) miscellaneous.

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[1]Further explanations given in the section on data analysis in Chapter III.

[2]The term "scale" was borrowed from Stevens (1951) and Selltiz, Jahoda, Deutsch and Cook (1959).

Internal source. The staff.

External source. The community and the environment.

Source reliability scale. Scale on which the items of information are distributed among the following alternatives: (a) very good, (b) good, (c) poor, (d) very poor, and (e) unknown.

Accessibility scale. Scale on which the items of information are distributed among the following alternatives: (a) very easily, (b) easily, (c) with some difficulty, and (d) with great difficulty.

Historical scale. Scale on which the items of information are distributed among the following categories: (a) historical, and (b) non-historical.

Statistical scale. Scale on which the items of information are distributed among the following categories: (a) statistical, and (b) non-statistical.

Utilization scale. Scale on which the items of information are distributed among the following alternatives: (a) to a large extent, (b) to a fair extent, (c) to a small extent, and (d) not at all.

Individual or group decision scale. Scale on which the decisions and the items of information are distributed among the following decision-making procedures:

(a) individual decision without consultation, (b) individual decision with consultation, (c) other group decision, (d) board decision, and (e) miscellaneous.

Precedent scale. Scale on which the decisions and the items of information are distributed among the following categories of decisions: (a) without precedent, (b) with one or two precedents, (c) with three or more precedents, and (d) with number of precedents unspecified.

Duration of the decision-making process. The difference, in days, between the date on which the problem or event that led directly to the decision occurred and the date on which the decision was made.

Method of appointment scale. Scale on which the items of information are distributed among the following methods of appointment of the superintendents: (a) department of education, and (b) school board members.

Previous teaching level scale. Scale on which the items of information are distributed among the following previous teaching levels of the superintendents: (a) elementary, (b) elementary and secondary, and (c) secondary.

Previous teaching area scale. Scale on which the items of information are distributed on the following previous teaching areas of the superintendents: (a) arts and humanities, (b) vocational and business, (c) mathematics

and science, and (d) miscellaneous.

Experience as superintendent. Experience as superintendent in the present school system.

School system size scale. Scale on which the items of information are distributed among the following school system sizes: (a) less than 10,000 students, (b) from 10,000 to 44,999 students, and (c) 45,000 students and over.

Secondary-elementary school system scale. Scale on which the items of information are distributed among the following school system categories: (a) secondary, (b) mixed, and (c) elementary.

Urban-rural school system scale. Scale on which the items of information are distributed among the following school system categories: (a) 10% or less rural, (b) 11% to 50% rural, (c) 51% to 80% rural, and (d) 81% and over rural.

Delimitations, Limitations and Assumptions

Delimitations. This study had the following delimitations:

1. It was limited to information required to make decisions in Canadian school systems of 5,000 students and over.

2. The study covered the period during which

questionnaires were completed by the respondents.

3. The decisions reported were made at the top echelons of the school systems.

4. The findings of the study are valid for the sample of decisions reported by the superintendents during the given period. They do not necessarily apply to other situations.

Limitations. This research was limited by the perceptions of the school superintendents both as to the importance attached to the decisions selected and to the information required to make these decisions. Furthermore, the group of respondents was not homogeneous: the superintendents' powers and responsibilities differed from one province to the next; their methods of appointment, their languages and their titles were also different.

Assumptions. The major methodological assumption underlying this study was that the instrument used yielded reliable and valid results.

Overview of the Report

The problem of this study is introduced and stated in the first two parts of this chapter. The next two parts include a discussion of the importance of the problem and a presentation of the specific research questions. The chapter concludes with a statement of the major delimitations,

limitations and assumptions of the study.

A review of the pertinent literature is presented in Chapter II. Chapter III discusses the principal methodological questions. The results are presented and discussed in Chapters IV and V respectively. Finally, the report closes with a chapter which first summarizes the study and then discusses its principal implications and recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this chapter is to provide a review of the literature related to the problems explored in this study. This review is divided into five parts: (a) the major operational areas in educational administration, (b) characteristics of information, (c) characteristics of decisions, (d) characteristics of decision-makers, and (e) characteristics of school systems.

Major Operational Area in Educational Administration

The principal problem of this study was to determine the information required by school superintendents for making important decisions in major operational areas in educational administration. It was, therefore, necessary to first identify these areas.

Various authors interested in information systems appear to agree that information in education falls within the five following operational areas: (a) students, (b) staffs, (c) finance, (d) facilities, and (e) curriculum. For instance, Cook (1968, p. 12), Farner (1968, p. 60), Marker and McGraw (1967, p. 198), Van Dusseldorp (1967, pp. 24-25) and Woollatt (1967, p. 71) have developed classifications identical or equivalent to those five operational areas. Reeder's textbook (1951) on the fundamentals of

public school administration, which appeared almost two decades ago, was divided into sections similar to these five operational areas.

Alcorn (1967, pp. 12-13) is one of the few authors in educational information system to have included a sixth operational area, the "community". Campbell, Corbally and Ramseyer used six areas in the fourth chapter of the latest edition (1966) of their *Introduction to Educational Administration*. The term "operational area" was borrowed from them [p. 96]. Frey and Getschman (1968, pp. 291-489) divided the last part of their book of readings in school administration according to the same areas.

These examples appeared sufficient to justify the selection of the following six operational areas for the purposes of the present study: (a) students, (b) staff, (c) finance, (d) facilities, (e) curriculum, and (f) environment. The extension of the sixth area from "community" to "environment" is explained in the next chapter in the section on data analysis.

Characteristics of Information

Information may be more or less recorded, more or less accessible, and more or less used. It may come from internal or external sources; these sources may be more or less reliable. Also, information may be historical in nature or expressed in statistical form. These varying properties

may influence the information gathering process.

Recordation. Decision-makers may seek or obtain information which is already recorded in written or printed form or that which is mainly transmitted orally. According to Forrester (1967, pp. 276-277), the long-range success of an organization depends almost entirely upon non-recorded information.

Accessibility. A lack of agreement seems to exist about the accessibility of the information required to make decisions. Yovits and Ernst (1967, p. 284) and Ackoff (1967, pp. B147-149) claim that managers possess more information than they can use. However, Cyert and March (1963, p. 110) feel that frequently information is not available to the decision-makers.

Utilization. Decision-makers may not use all the data that are of value in reaching a decision. They may, in fact, be burdened by an information overload, as suggested by Ackoff (1967, p. B-148) and consequently, use only part of information available to them.

Source. The information required by decision-makers may originate within the boundary of a particular organization or from its external environment. According to Crowley (1966, pp. 16-18) much of the information which the managers require in order to make decisions comes from

sources external to the organization.

Source reliability. Decision-makers may obtain information of various degrees of reliability. As Emory and Niland (1968, p. 52) point out, the quality of the information depends upon its source or more precisely upon the degree of reliability that the decision-makers can attribute to the individual possessing the information.

Historical aspect. When decision-makers need information to help them select one or more alternatives, they may seek facts or figures about events that took place in the past or that are presently occurring. Furthermore, according to Yovits and Ernst (1967), "... there is mounting evidence that adaptive decision-making requires advanced or 'precognitive' information [p. 285]." Similarly, Dearden (1967, p. 186) argues that often information important to managers is not historical in nature.

Statistical aspect. Information required to make decisions may also differ as to the feasibility of transforming it into measurable quantities. In this regard, Yovits and Ernst (1967, pp. 285-286) suggest that generally the information required by managers is uncertain and not quantifiable.

Characteristics of Decision-Making

Two factors in decision-making may influence the

information gathering process. They are: (a) the duration of the decision-making process, and (b) individual versus group decision-making.

The decision-making process may start with the awareness of a problem and end with the selection of a solution. Implementation may or may not be included in the process. Simon (1965, pp. 53-56), for example, feels that the implementation of a decision implies a new decision-making process, and thus considers the selection of a course of action as the last principal phase of the process. The process may also include evaluation and modification of the decisions. This latter practice prevails in the system analysis approach, (e.g. Lehmann, 1968, p. 145; Nadler, 1967, p. 36; Pfeiffer, 1968, p. 29). It could be argued here also that the evaluation step involves a new cycle of the decision-making process. In this study, the process was considered to end with the selection of a solution.

Group decision-making may also have an impact on the information gathering process. As Tannenbaum and Massarik (1961, pp. 345-346) point out, group decision-making is often used as a means of increasing the amount of information available to make a decision. According to Leavitt (1967, pp. 130-132) decisions at the top echelon of organizations are made mainly in groups.

Characteristics of Decision-Makers

Certain personal characteristics of the decision-maker may have an influence on the information required to make decisions. For instance, an executive with a marketing background may desire to obtain detailed information of a transaction involving marketing (Head, 1967, pp. 24-25). This type of behavior is probably due to the phenomenon of selective perception, as described by Dearborn and Simon (1958). It could be argued similarly that a school superintendent with a background in mathematics teaching may be inclined to search for a type of information different from the kind required by one with a background in the teaching of philosophy.

Characteristics of School Systems

Marker and McGraw (1967, p. 200) suggest that various characteristics of school systems, such as size, may have an influence on the information required in decision-making. Information requirements may also depend on the composition of the student body. For example, a school system may be composed entirely or predominantly of students residing in rural communities or of students at the elementary level.

Summary

Information, in education, may be classified under the six following operational areas: (a) students, (b) staff, (c) finance, (d) facilities, (e) curriculum, and (f) environment.

An analysis of characteristics of information may include the following aspects: (a) recordation, (b) source, (c) source reliability, (d) accessibility, (e) historical aspect, (f) statistical aspect, and (g) utilization.

The following factors may have an influence on the information gathering process: (a) duration of the decision-making process, (b) individual or group decision-making, (c) characteristics of decision-makers, and (d) characteristics of school systems.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to present the methodology used in this study. First, attention is given to the research design. Then a description is made of the collection and analysis of the data. The chapter concludes with a discussion of the coding reliability.

Research Design

This study has focused exclusively on information required for decisions made within a short period prior to completion of the questionnaire. No reports of similar investigations were found. A few studies referred to the problem of information requirements within a variety of contexts. Bourque (1965), for instance, explored the problem of information requirements along with various other problems within the context of management information systems. Information requirements and characteristics are discussed by many authors but most of them merely express opinions on the matter.

Davitz and Davitz (1967) point out that:

> In some instances, particularly early in a line of investigation, the major purpose of research is exploratory or descriptive, and the central question of a study must necessarily be somewhat open-ended, because the terms of the answer to such a question cannot be fully anticipated before the observations are made. In the opinion of

> some investigators, many areas in psychological or educational theory and research have not yet reached a level of sophistication at which it is profitable and appropriate to design studies involving tests of highly refined and specific hypotheses.... As a matter of fact, in the social and behavioral sciences, some have argued that not enough of this kind of research has been done and that therefore many investigators have dealt with the wrong problems or have floundered in trivia [pp. 5, 6, 8].

Likewise, Selltiz *et al.* (1959) in one of their chapters on research design, feel that in "... the case of problems about which little knowledge is available, an exploratory study is usually most appropriate [p. 52]."

Consequently, the exploratory and descriptive approaches were chosen as research design.

Data Collection

This section describes the method of data collection. It is divided into four parts dealing with: (a) the critical incident technique, (b) the instrument, (c) the survey, and (d) the respondents.

The critical incident technique. Information requirements may be established by three different methods: the decision classification approach, the critical incident technique, and the information flow technique. Beged-Dov (1967, pp. B827-28) appears to favor the first method, the classification approach, and Prince (1966, p. 24), the second method, the critical incident technique. According

to Bourque (1965, pp. 188-190) who has considered the three methods at the level of the plant manager in the plywood industry, the critical incident technique proved to be most satisfactory mainly because, as he observed, it relies most heavily on the decision-maker. The critical incident technique was also used by Hill (1964, p. 80) in an exploration of administrative decision-making in a large public agency.

The critical incident technique was developed by Flanagan (1954). Travers (1958, pp. 221-222; 1964, pp. 265-268), in the first two editions of his book on educational research, severely criticizes the technique. He claims that the technique provides a sample of incidents which are unlikely to be observed again, that it involves a difficult classification process and that it is extremely laborious, especially for graduate students. However, in his remarks, Travers probably refers to hypothesis-testing designs. Indeed, in a section on the desirable characteristics of the research problems, he writes:

> The problem that is eventually isolated may be stated in terms of a question for which the proposed research is designed to obtain an answer. Sometimes the question to be answered is referred to as a hypothesis. Sometimes in this book it has been called a deduction from a postulate. Certain criteria may be suggested for judging the merits of hypothesis, and these need to be discussed further at this point. It will be assumed in this discussion that the hypothesis is firmly rooted in a framework of theory, and hence this particular criterion will not be

> discussed here at further length [1958, p. 81; 1964, p. 88; 1969, p. 69].

In the latest edition of his book (1969), Travers does not include any mention of the critical incident technique.

The instrument. According to Flanagan (1954), the questionnaire approach is appropriate to the critical incident technique:

> In situations where the observers are motivated to read the instructions carefully and answer conscientiously, this technique seems to give results which are not essentially different from those obtained by the interview method [p. 343].

Flanagan's remarks concerning the motivation of respondents apply to any type of questionnaire survey. In the present study, an attempt was made to increase the motivation of the respondents by soliciting their co-operation before sending the questionnaire which was constructed for the purpose of this study.

Two pilot studies were conducted to test and improve the instrument. In the first instance, the sample consisted of nine doctoral students in educational administration and in the second, of twelve superintendents in the Provinces of Alberta and Saskatchewan.

In the questionnaire, the respondents were requested to refer to the most important decision they had made within the previous seven days. Two basic points may need certain clarification: the terms "most important", and "previous seven days".

The term "most important" was used mainly in an attempt to obtain a sample of decisions that normally fall within the responsibility of higher executives. As Etzioni (1964) points out, "... the higher the rank, the more jobs consist of decision-making, and fewer actual performances are carried out [p. 30]."

As for the time element, studies have shown that the more recent the incident, the better are the chances of remembering the facts. In an investigation made by Flanagan (1954, p. 331) in which foremen were requested to report critical incidents, those reporting daily reported 315 incidents; those weekly, 155; and those fortnightly, 63. Weekly reporting, consequently, had the effect of reducing the number of observations to about one-half of those reported daily. Whether the specification of a seven-day period in which to select the most important decision had the same effect on the number of items of information reported by the school superintendents is difficult to assess. It should be noted that the superintendents were referring to only one decision about which they gave certain details whereas in Flanagan's study the foremen were describing a large number of critical incidents.

The French version of the questionnaire was revised by a bilingual graduate student in educational administration to verify its equivalence to the English version.

In spite of this revision, an ambiguity was noticed

at the beginning of the survey. The expression "item of information" was translated in French by "unité d' information". It was apparent in four of the questionnaires received from French speaking respondents from Quebec during the first phase of the survey, that this expression was interpretated in the sense of "unité administrative" (administrative unit). Consequently, the term "unité", which was in fact superfluous, was struck out in the second and third paragraphs of page four and in step A of the remaining five pages of the questionnaire. This amended version was sent to the Quebec respondents during the remainder of the survey period.

The four above mentioned questionnaires were also returned for correction and the three that were sent back were usable.

Copies of the final English and French versions of the questionnaires are included in Appendix A.

The survey. The subjects were divided into six groups on a random basis within each province and the questionnaire was sent to each group in only one of six consecutive weeks. The first group of questionnaires was sent on October 31 and the last group on December 1, 1969. Returns were received between November 5, 1969 and February 17, 1970, thus covering a period of sixteen weeks. Fifty-five percent of these decisions were made in the fifth,

sixth and seventh weeks on the survey, i.e., between November 24 and December 12, 1969.

The questionnaires were sent over a period of six weeks in an attempt to obtain a wider variety of decision content and avoid the kind of problem illustrated in the following example. In three of the first six questionnaires that were received from Quebec, the superintendents reported decisions required to handle the problem of high school students attending demonstrations against Bill 63. If all the questionnaires had been sent the first week, it is probable that a high proportion of the respondents in Quebec would have reported similar situations, thus diminishing the range of decisions to be analysed in the study.

The respondents. The survey was conducted among superintendents of Canadian school districts of 5,000 students and over. As mentioned above, a letter was sent to the superintendents included in the population, requesting their cooperation. The distribution of replies is given in Table 1.

The questionnaire was sent to all the subjects, including those who had not signified their willingness to participate in the research project, because the survey was conducted only once instead of twice as had been planned when the superintendents were first contacted by mail.

TABLE 1

DISTRIBUTION OF REPLIES TO LETTER SOLICITING SUPERINTENDENTS' PARTICIPATION

	f	%
Participation accepted	169	68
Participation refused	37	15
Participation undecided	7	3
No answer	35	14
Total	248	100

The letter accompanying the questionnaire was followed by two reminder letters and a telegram. The first reminder letter was not sent to those who refused to participate in the study, and the second reminder letter and the telegram were sent only to those who had definitely agreed to participate in the study. A copy of the letters and telegram to the superintendents is included in Appendix B.

A total of 158 superintendents returned the questionnaire; seven replies had to be eliminated. The distribution of returns according to the replies to the soliciting letter is given in Table 2.

Only 8% of those who originally refused to participate in the study returned the questionnaire duly completed. The percentages of response from the group of superintendents who

TABLE 2

DISTRIBUTION OF QUESTIONNAIRE RETURNS ACCORDING TO REPLIES TO LETTER SOLICITING PARTICIPATION

	Participation accepted		Participation refused		Participation undecided		No answer to solicitation letter		Total	
	f	%	f	%	f	%	f	%	f	%
Questionnaires usable	134	79	3	8	2	29	12	34	151	61
Questionnaires unusable	7	4							7	3
Negative reply	10	6	4	11	2	29	3	9	19	8
No reply to questionnaire	18	11	30	81	3	43	20	57	71	29
Total	169	100	37	100	7	100	35	100	248	100

were originally undecided and who did not reply to the first letter were respectively 29% and 34%. These low percentages can be interpreted as an indication that a certain proportion of subjects were unwilling to participate in the research project, regardless of the nature of the study.

Among the sixteen superintendents, across Canada, who indicated why they were not returning the questionnaire, eight mentioned that they were too busy, four that they had difficulty with the questionnaire, three that they were either ill or had been transferred to another position, and one that there were too many surveys being conducted in school systems.

To summarize, explicit or implicit refusals to participate in the study may be explained by five main reasons: (a) an earlier decision not to participate in any study, (b) lack of time, closely related to the first explanation, (c) difficulty in completing the questionnaire, (d) physical impossibility of completing the questionnaire, and (e) too many surveys being conducted in school systems.

Table 3 includes the distribution of returns by Canadian regions. The highest proportion of returns came from the Maritimes, followed by the Western provinces and the province of Quebec. The percentage of returns from the province of Ontario was well below those of other provinces.

TABLE 3

DISTRIBUTION OF QUESTIONNAIRE RETURNS BY REGIONS

	Western Provinces		Ontario		Quebec		Maritimes		Total	
	f	%	f	%	f	%	f	%	f	%
Questionnaires usable	38	66	38	49	50	63	25	74	151	61
Questionnaires unusable	3	5	1	1	2*	3	1	3	7	3
Negative reply	5	9	11	14	1	1	2	6	19	8
No reply to questionnaire	12	21	27	35	26	33	6	18	71	29
Total	58	100	77	100	79	100	34	100	248	100

*Includes one of the four questionnaires that were returned because of an translation error, as explained in the previous section.

There was a large difference in the proportion of returns between the regional and local school boards in Quebec. Regional school boards include only schools offering secondary education and, in some cases, special education. Most of the local school boards offer elementary education only. The returns from the regional and local school boards reached 48% and 87% respectively.

Data Analysis

The first part of this section describes the content analysis techniques used in this study. The second part explains the statistical techniques that guided the analysis of the data.

Content analysis. The formulation of the categories for the operational area, historical, and statistical scales was based upon the method suggested by Flanagan (1954):

> The usual procedure is to sort a relatively small sample of incidents into piles that are related to the frame of reference selected. After these tentative categories have been established brief definitions of them are made, and additional incidents are classified into them. During this process, needs for redefinition and for the development of new categories are noted. The tentative categories are modified as indicated and the process continued until all the incidents have been classified [pp. 344-45].

The variety of items that could appear in each operational area is so broad that any attempt to define the

six areas was precluded. The classification of items of information into operational areas was therefore made with the help of guide lines derived, in the main, from the classification elaborated by a number of authors. These guide lines are presented in Table 4. In this table, the guide lines which are not followed by the name of an author were developed for the purpose of this study.

Differences occur among authors in the content of the classification of operational areas. For instance, Maertz (1966, p. 166) classified "trips and excursions" in the area of pupil personnel whereas Holdaway (1968, p. 51) classified "excursions" in the area of curriculum; Maertz (1966, p. 165) classified "vocational services" in the area of instructional program whereas Fish (1965, p. 228) classified "providing counseling services" in the area of pupil personnel; Campbell *et al.* (1966, p. 111) classified "pupil personnel services" in the area of pupil personnel whereas Woollatt (1967, p. 72) classified "pupil personnel services" in the area in curriculum; Campbell *et al* (1966, p. 123) classified "transportation" in the area of physical facilities whereas Atkinson *et al.*(1967,p.55) classified "transportation records" in the area of programs and services.

The distinction between the areas of students and curriculum was particularly difficult to establish. However, there appeared to be a tendency among authors to

include in the area of students all pupil services except those directly related to the curriculum, such as special education and field trips. In other words, curriculum was generally used in the sense of "... all of the planned experiences provided by the school to assist pupils in attaining the designated learning outcomes to the best of their abilities (Neagley and Evans, 1965, p. 2)."

Among the guide lines presented in Table 4, "pupil-teacher-ratio" and "staff relationship" could have been included in an area other than that of staff. The first one was classified in the area of staff because, in most cases, school administrators alter the ratio by controlling the number of teachers rather than the number of pupils. "Staff relationship with students or community" was included in the area of staff because in such cases a superintendent would more likely be interested in staff performance. For instance, if students are misbehaving because a teacher has poor discipline, the superintendent's office would probably include such information in the teacher's file.

The term "environment" in the last operational area was chosen in preference to that of "community". It was thus possible to include in this area items of information concerning matters beyond the boundary of the school system.

No guide lines were found in the literature for the construction of the historical and statistical scales.

TABLE 4

GUIDE LINES FOR THE OPERATIONAL AREA SCALE

1. STUDENTS:

Entrance age (Holdaway, 1968, p. 52)
Attendance policy (Holdaway, 1968, p. 52)
Drop outs, failure rate (Maertz, 1966, p. 166)
Pupil accounting (Fish, 1965, p. 228)
Pupil inventory and organization (Campbell et al., 1966, p. 109)
Student projection
Ethnic distribution (Woollatt, 1967, p. 72)
Scheduling (Bright, 1968, p. 15)
Control of pupil behavior (Campbell et al., 1966, p. 112)
Restrictions to pupils (Maertz, 1966, p. 166)
Growth assessment (Fish, 1965, p. 228)
Grade reporting (Bright, 1968, p. 15)
Achievement (Maertz, 1966, p. 166)
Social consequences of educational testing (Frey and Getschman, 1968, p. 371)
Effect on pupils
Pupil services (Campbell et al., 1966, p. 111)
Health services (Fish, 1965, p. 228)
Counselling services (Fish, 1965, p. 228)

2. STAFF (educational and non-educational):

Personnel policies (Fish, 1965, p. 229)
Engagement (Maertz, 1966, p. 167)
Staff assignment (Lindquist, 1966, p. 198)
Supervision
In-service training and internship program (Maertz, 1966, p. 167)
Substitutes (Holdaway, 1968, p. 51)
Task description
Collective agreement (except financial matters)
Staff performance
Bursaries and leaves (Holdaway, 1968, p. 51)
Attendance at conventions and institutes (Holdaway, 1968, p. 51)
Pupil-teacher ratio
Staff relationship with students or environment (including student behavior in relation to staff performance)

TABLE 4 (Continued)

3. FINANCE:

Accounting (Fish, 1965, p. 228)
Budget-making, excluding specific budget items related to other operational areas
Provision of grants (Maertz, 1966, p. 168)
Debt service (Woollatt, 1967, p. 70)
Securing revenue (Campbell et al., 1966, p. 125)
Salary schedule (Fish, 1965, p. 230)
Salary and working conditions adjustment
Insurance (Fish, 1965, p. 230)

4. FACILITIES:

Land acquisition (Holdaway, 1968, p. 52)
Zoning by-law and municipal services
Plant construction, operation and maintenance (Fish, 1965, p. 229)
Architects and contractors (Maertz, 1966, p. 169)
Disposition (Maertz, 1966, p. 169)
Cost and market value of facilities (Atkinson et al., 1967, p. 55)
Plant needs (Fish, 1965, p. 229)
Number of pupil stations (Atkinson et al., 1967, p. 54)
Equipment and supplies (excluding instructional materials)
Transportation (Campbell et al., 1966, p. 123)
Teacher residence (Maertz, 1966, p. 169)
Computer

5. CURRICULUM:

Objectives (Campbell et al., 1966, p. 106)
Instructional materials (Campbell et al., 1966, p. 106)
Cost of materials and programs
Special education (Woollatt, 1967, p. 72)
Curriculum differentiation
Kindergartens (Holdaway, 1968, p. 51)
Field trips (Maertz, 1966, p. 165)
Library (Maertz, 1966, p. 165)

TABLE 4 (Concluded)

6. ENVIRONMENT:

School board
Parents
Community
Associations and service clubs
General population survey
Housing starts
Department of Education
Universities

NOTE:

Knowledge about a subject acquired through any kind of documents, classes, conferences or outside practice, and opinions and reactions of others on certain matters, has been classified in the operational area to which the subject matter belongs, independent of the origin. For instance, "Community feeling on kindergartens" has been classified in the area of curriculum not in that of environment.

Opinions and reactions of others also include: viewpoints, feelings, attitudes, willingness, wishes, complaints, approval, support, report, recommendations, and other related concepts.

The historical scale was defined as including two categories based upon the answer (yes or no) given to the following question: "Was the information (or the answer to the information, if stated in the form of a question or problem) most likely known by anyone (other than individuals or groups concerned, in the case of opinions and reactions) before the beginning of the decision-making process?"

To be considered as historical, opinions or reactions (as described in Table 4) should have been most likely known by someone else before the beginning of the decision-making process. For instance, in the case of a decision concerning the removal of a principal, an item described as "Principal felt he was in wrong slot" was treated as non-historical since it was considered that this information was probably known by no one but the principal before the beginning of the decision-making process.

The statistical scale included two categories also based upon the answer (yes or no) to the following question: "Was the information most likely stated in mathematical, statistical or quantitative form or was it derived directly from such form?" If the information consisted of a date, it was considered as an item expressed in statistical form. If the information referred to a form of absence (e.g., there was no precedent) it was considered as an item expressed in non-statistical form.

Table 5 illustrates how the items of information reported by a superintendent were classified in the operational area, historical and statistical scales. The decision concerned a recommendation to demolish an old school.

The decision was classified in the area of facilities. Items 2 and 3, in Table 5, were classified as non-historical since it was considered that these opinions and reactions became known during the decision-making process, probably through consultations. Item 7 was classified as non-historical since it was considered that this information became known as a result of a study made during the decision-making process. It was classified as statistical since it was considered to be directly derived from information stated in mathematical form. Item 10 was classified as historical since it was considered that this information was almost certainly known before the decision-making process, because a decision probably had to be made first whether or not to renovate the school.

It may be quite difficult to obtain a consensus on some of the classifications that were made in Table 5, even if the guide-lines are accepted as valid. The example was chosen because it contained many difficulties, more in fact than the average case.

The source scale, based on content of step B-c in the questionnaire, was developed to include the following

TABLE 5

ILLUSTRATION OF ITEM CLASSIFICATION

Item No.	Description	Classification
1	Age of present school	Facilities Historical Statistical
2	The staff felt a new school would aid them in achieving their goals	Facilities (opinions and reactions)* Non-historical Non-statistical
3	Parents desired better accommodations for their children	Facilities (opinions and reactions) Non-historical Non-statistical
4	Department of Education grants	Finance (provision of grants) Historical Statistical
5	The area served by the school is industrial in character	Environment Historical Non-statistical
6	This school has not been renovated or remodelled since being built	Facilities Historical Non-statistical (negation)
7	Projections show need for a school for at least next 25 years	Facilities (plant needs) Non-historical Statistical
8	Finances appear possible through a Government source	Finance Historical Non-statistical
9	The site, while small, is at least adequate and there is no more desirable site in the area	Facilities Historical Non-statistical
10	School as is would cost over $200,000 to bring up to standard	Facilities (cost) Historical Statistical

*The comments in parenthesis refer to the guide lines of Table 4.

categories of sources: (a) staff: principal, teacher, central office staff and other staff within the school system (including the respondent); (b) community: school trustee, parent, consulting firm and other community member or organization; (c) environment: superintendent from another school system, department of education staff, and any individual, organization or external document excluding those mentioned in (a) and (b); and (d) miscellaneous: two or more sources, and any other source not included in the above three categories.

The remaining scales were based directly from the content of the questionnaire.

Statistical analysis. Since this study was descriptive and since inferential statistical techniques reveal an absence or presence of statistical significance which does not necessarily correspond to an absence or presence of substantive significance (Bakan, 1967, pp. 6-12; Blommers and Lindquist, 1960, pp. 309-310; Clark, 1963, pp. 467-468; Nunnally, 1960, pp. 642-643; Selltiz *et al.*, 1959, p. 422), the data were interpreted by means of descriptive statistics. Consequently, the terms "significant" and "significantly" in this thesis are not used in their statistical sense, i.e., in the context of the rejection of the null hypothesis, but in accordance with the procedures outlined in the following paragraphs.

The data were presented in the form of either frequency distributions (research questions 1.1, 2.1, 3.1, 4.1, 5.1, 5.2, 6.1 and 6.3) or means (research questions 4.2, 5.3 and 6.2).

In the case of research questions 3.1, 5.2, 6.1 and 6.3 a value of D as used in the Kolmogorov-Smirnov two-sample test (Siegel, 1956, pp. 127-136) was calculated to estimate the difference between frequency distributions taken in pairs. A total of 225 D's were thus calculated and plotted on a frequency polygon as shown in Figure 1.

D's lower than .175 occurred too frequently to be considered significant. On the other hand, D's of .250 and over occurred in relatively rare instances and therefore could be considered as significant. In view of the fact that the study is exploratory, as well as descriptive, a value of .175 was chosen as the point of demarcation and, consequently, any D of .175 and over was considered as significant. As a result, 63 pairs or 28% of the total of 225 had a D of .175 and over and were retained for analysis.

In the case of research questions 5.3 and 6.2, the difference in means, for each pair of comparison, was transformed into standard scores, dividing each difference by the standard deviation of the total number of observations for a given related variable. The 90 standard scores thus obtained were plotted on a frequency polygon as shown in Figure 2.

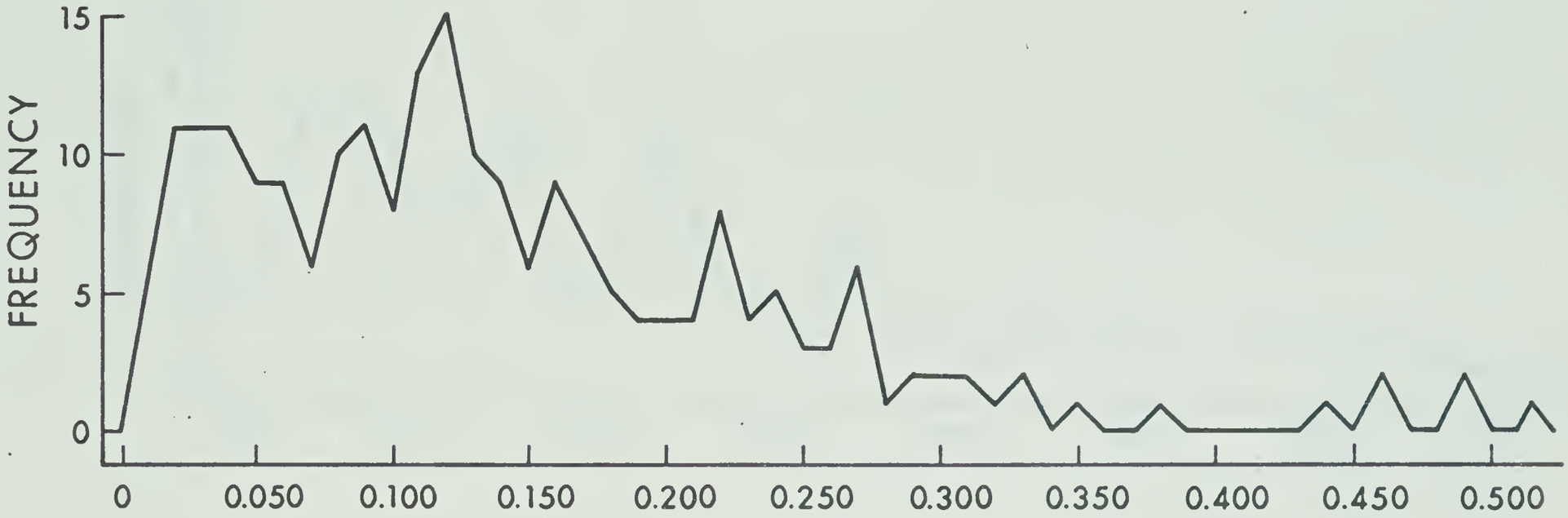

Figure 1

DISTRIBUTIONS OF THE 225 D's

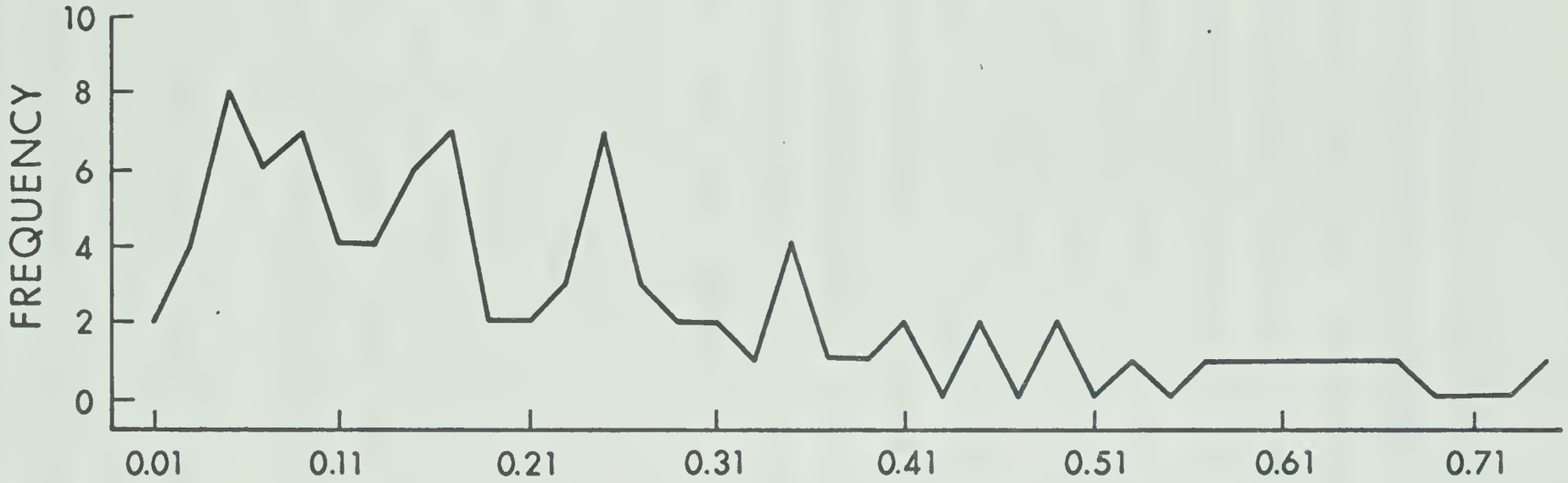

Figure 2

DISTRIBUTIONS OF THE 90 STANDARD SCORES

Standard scores lower than 0.28 occurred too frequently to be considered significant. On the other hand, scores of 0.37 and over could be considered as significant since such values occurred in relatively rare instances. Considering the exploratory nature of the study, a standard score of 0.28 and over was retained as significant. There were 25 standard scores out of 90, or 28%, with a value of 0.28 or over.

The above procedure of selecting a point of demarcation with the help of a frequency polygon was inspired by the procedure used in factor analysis to determine the eigenvalue at which point extraction of factors ceases (Cattell, 1966, pp. 200-211).

Coding Reliability

The reliability of the investigator's coding on the operational area, historical and statistical scales was evaluated by a comparison with the coding of 19 questionnaires chosen at random among those completed in English, done by doctoral students in educational administration working independently.

This procedure raised the problem of the amount and the form of training required or suitable for the task. Extensive training of coders by the investigator may help to achieve agreement within an investigation but may not necessarily help to achieve intersubjectivity. As pointed

out by Kaplan (1964) in his concluding remarks on the problem of intersubjectivity, "the methodological question is always limited to whether what is reported as an observation can be used in subsequent inquiry even if the particular observer is no longer a part of the context [p. 128]."

In this study, the coders were merely asked to read carefully parts III and IV of the questionnaire, the first draft of the text which dealt with the problem of the classification of the three scales, and brief written instructions (Appendix C). It was presumed that this type of training with written procedures (which procedures will be available to subsequent investigators) would help to achieve a greater degree of intersubjectivity but that on the other hand, it might produce a lower degree of reliability.

The results in the first evaluation were such as to warrant a second one. Two different coders were used in the second attempt since the first two coders had already received some training. The results of both attempts on the three scales are presented in Table 6.

The coding on the statistical scale appears to be highly reliable.

The coding on the operational area scale was also reliable but the proportion of agreement with at least one coder was reduced from 89% in the first attempt to 82% in

TABLE 6

PERCENTAGE OF AGREEMENT BETWEEN CODERS AND INVESTIGATOR ON BOTH ATTEMPTS

Agreement with investigator	Operational area		Historical scale		Statistical scale	
	1st	2nd	1st	2nd	1st	2nd
Both coders	67	68	18	42	89	93
At least one coder	89	82	79	88	95	96
N	123*	123	104	104	104	104

* 19 decisions and 104 items

the second attempt. This reduction was due mainly to a change made in the classification of the items of information consisting of opinions and reactions of others on certain matters.

Previous to the first attempt, these items of information had been classified in the operational area corresponding to the individual or groups having these opinions and reactions. The first two coders classified three of these items as pertaining to the subject matter area. Since these items could logically be classified in the operational area to which the subject matter belongs, they were subsequently classified as indicated in the note at the bottom of Table 4.

This amended table guided the coders in the second evaluation attempt. However, the last two coders classified nine of these items of information in the operational area corresponding to the individual or groups holding the opinions or reactions, in spite of the fact that an example was given in the note at the bottom of Table 4, that they were reminded of that note in the instructions and that two further examples, items 2 and 3, were given in Table 5. These nine items contributed greatly to the reduction in the degree of reliability on the operational area scale from the first to the second attempts.

There was also lack of agreement between the investigator and the last two coders on the operational area scale in one decision and twelve other items. The decision was to establish a demonstration school; it was classified by the investigator in the area of staff, the demonstration school being considered as in-training service, and by the two coders in the area of curriculum. The items on which there was complete disagreement on the operational area scale are listed in Table 7.

The coding on the historical scale was not considered as reliable. The evaluation may appear to have improved from the first to the second attempt since the proportion of agreement of the coders with the investigator increased from 18% to 42% (Table 6), but these figures are misleading. In the first attempt, the scale was made up of three

TABLE 7

LIST OF ITEMS ON WHICH THERE WERE COMPLETE DISAGREEMENT ON THE OPERATIONAL AREA SCALE IN THE SECOND CODING EVALUATION

Description of items (Decisions shown in parenthesis)	Investigator coding	1st coder	2nd coder
(Reorganization of Adult Education Division)			
1. Need for morning, afternoon and evening classes	Curriculum	Student	Student
2. Problem of giving orders to custodians	Staff	Facilities	Facilities
(To redesign the remedial instruction programme in the elementary school)			
3. The total record of the results of the present remedial programme showed a need for a change of approach	Curriculum	Student	Student
4. Teacher assessment	Curriculum*	Student	Staff
5. Assessment of principal	Curriculum*	Student	Staff
6. Assessment of special counsellor	Curriculum*	Student	Staff
7. Elementary supervisor	Curriculum*	Student	Staff

TABLE 7 (Continued)

Description of items	Investigator coding	1st coder	2nd coder
(Decision on a change of design of Elementary Schools in this District)			
8. The Department of Education is interested in such a project	Facilities*	Environment	Environment
(Suspension of Pupils from School, Number of days)			
9. Reaction of parents	Student*	Environment	Environment
10. Reaction of school trustees	Student*	Environment	Environment
(Salaries to be recommended for top line staff -- out of salary agreement)			
11. Some evaluation of what would likely prove acceptable to Committee of Board which will receive recommendation	Finance	Environment	Environment
(Whether or not to ask for resignation of a teacher)			
12. Students were getting out of control to the extent of burning incense in the room	Staff**	Student	Student
13. A parent phoned to complain about lack of order in the class	Staff*	Student	Student

TABLE 7 (Continued)

Description of items	Investigator coding	1st coder	2nd coder
(Appointment of a Secondary Principal)			
14. Particular needs of the school	Staff	Student	Student
(Choice of the Principal for a new high school)			
15. His relationship (a candidate) to school board member	Staff**	Environment	Environment
16. His acceptance by local population	Staff*	Environment	Environment
(The number of staff personnel to be authorized for a school that is carrying on a "light-house" curriculum program next school year. The principal requested an exhorbitant increase)			
17. Program organization and teacher-load factor	Curriculum	Staff	Staff
(Whether or not to release a teacher from teaching in a particular subject area)			
18. Pupils have "turned-off" the teacher	Staff**	Student	Student
19. Pupils habitually correcting teacher on her presentation in class	Staff**	Student	Student

TABLE 7 (Concluded)

Description of items	Investigator coding	1st coder	2nd coder
(The decision whether in the new system reorganization there should be single or dual leadership -- superintendent and business administration)			
20. School Act	Staff	Environment	Environment
21. Administration - school board relations	Staff**	Environment	Environment

* Opinions and reactions (note Table 4).
** Staff relationship with students or environment.

categories: it was thus possible to attain such an agreement by pure chance in 11% of the cases ($1/3^2$) whereas in the second attempt it was possible to attain complete agreement by pure chance in 25% of the cases ($1/2^2$) because the scale included only two categories.

The classification on the historical scale was therefore highly subjective and does not attain, at this stage of its development, any intersubjectivity. Care should therefore be taken in interpreting the findings of this investigation on that scale.

The investigator evaluated the reliability of his own coding on two different occasions; the first time he recoded all the items; the second, the above 19 questionnaires chosen at random. The percentage of agreement with his own coding ranged from 90 to 96.5%. A true measure, according to Kaplan (1954), is a pure fiction.

> It is for this reason that I speak of their conception as a fiction. What they call the *true measure* is what would result if we were to perform a measurement entirely free from error. But this is just what we cannot perform [p. 202].

Summary

This study was exploratory and descriptive. The data were collected by a questionnaire using the critical incident technique. The population included superintendents of large Canadian school systems who described an important decision made in a given week and the information required

to make this decision. Of the 248 superintendents who were asked to participate in the research project, 169 agreed to do so. As a final result, 159 questionnaires were returned of which eight had to be eliminated.

The data were interpreted by means of descriptive statistics.

The coding of the investigator on the three scales based on a content analysis was evaluated with the help of graduate students. The most reliable scale was the statistical scale, followed by the operational area scale. The coding of the historical scale was considered highly unreliable.

CHAPTER IV

DATA ANALYSIS

The results of this investigation are reported in this chapter. A discussion of the results appears in the next chapter.

This chapter is divided into six parts. The first part deals with the findings related to the major problem under investigation, i.e., the information required by superintendents for making important decisions in each of the six principal operational areas in educational administration. The second part describes the characteristics of the information and the third part examines these in their reference to each operational area. In the same way, the fourth and fifth parts describe and examine the characteristics of the decisions. The concluding part deals with the demographic characteristics of the superintendents and of the school systems in relation to each operational area.

Information in Each Major Operational Area

This study was initiated, primarily, to determine the information required by school superintendents for making important decisions in major operational areas in educational administration. The findings are described below in terms of the following research question.

Research question 1.1. What is the distribution of

the items of information on the operational area scale?

The distribution of the items of information in each operational area is detailed in Table 8. Information required by superintendents in the area of staff represented 47% of the total number of items of information. Nineteen percent and 14% of the items of information were required in the areas of students and facilities respectively. The areas of curriculum, finance and environment each included respectively 9%, 8% and 3% of the items of information.

TABLE 8

DISTRIBUTION OF THE ITEMS OF INFORMATION IN EACH OPERATIONAL AREA

Area	f	%
Students	151	19
Staff	377	47
Finance	62	8
Facilities	108	14
Curriculum	73	9
Environment	25	3
Total	796	100

Description of the Characteristics of the Information

The characteristics of the information reported by the superintendents are described below in terms of the following research question.

Research question 2.1. What is the distribution of the items of information on each of the following scales: (a) recordation, (b) source, (c) source reliability, (d) accessibility, (e) historical, (f) statistical, and (g) utilization?

The distribution of the items of information on each of the scales is presented in Tables 9 to 15.

Fifty-two percent of the items of information were said to be recorded either to a large extent or to a fair extent. Thirty-one percent were not recorded at all (Table 9).

TABLE 9

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE RECORDATION SCALE

Alternative	f	%
To a large extent	240	30
To a fair extent	171	22
To a small extent	131	17
Not at all	246	31
Total	788	100

The main source of information was the staff who contributed 67% of the total number of items of information. The community and the environment constituted the source in 16% and 11% of the cases respectively (Table 10).

TABLE 10

DISTRIBUTION OF THE ITEMS OF INFORMATION IN EACH SOURCE

Source	f	%
Staff	532	67
Community	123	16
Environment	89	11
Miscellaneous	45	6
Total	789	100

The source of information was considered either good or very good in 90% of the items. Only 6% of the items were reported as having poor or very poor source reliability (Table 11).

TABLE 11

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE SOURCE RELIABILITY SCALE

Alternative	f	%
Very good	384	49
Good	319	41
Poor	36	5
Very poor	11	1
Unknown	30	4
Total	780	100

Seventy-one percent of the items of information were said to be either easily or very easily accessible. Twenty-three percent were accessible with some difficulty and 6% with great difficulty (Table 12).

TABLE 12

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE ACCESSIBILITY SCALE

Alternative	f	%
Very easily	284	36
Easily	276	35
With some difficulty	186	23
With great difficulty	50	6
Total	796	100

Seventy-four percent of the items of the information were historical in nature (Table 13). (As mentioned in the previous chapter, the coding on the historical scale had a low reliability.)

TABLE 13

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE HISTORICAL SCALE

	f	%
Historical	589	74
Non-historical	207	26
Total	796	100

Twenty-four percent of the items of information were statistical in nature (Table 14).

TABLE 14

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE STATISTICAL SCALE

	f	%
Statistical	188	24
Non-statistical	608	76
Total	796	100

Superintendents reported that 88% of the items of information were utilized either to a large extent or to a fair extent. Only 3% of the information was not used at all (Table 15).

TABLE 15

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE UTILIZATION SCALE

Alternative	f	%
To a large extent	447	58
To a fair extent	239	31
To a small extent	67	9
Not at all	24	3
Total	777	100

Characteristics of the Information per Operational Area

The findings related to the characteristics of the information in each operational area are reported in this section according to the terms of the following research question.

Research question 3.1. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following scales:

(a) recordation, (b) source, (c) source reliability, (d) accessibility, (e) historical, (f) statistical, and (g) utilization?

The distribution of the items of information by operational area on each of these scales is presented in Tables 16 to 22 and the D for each pair of distributions is reported in Tables 23 to 29.

In the tables reporting the value of the D's or of the standard scores, the operational areas were, as far as possible, arranged in decreasing order from top to bottom and from left to right according to the value of central tendency or to the proportion of items in the first class of the dichotomies. For instance, the information in the area of staff, which was placed to the right side of Table 23 was recorded to a lesser extent than that in the other areas. Or, the items of information in the area of curriculum, which was placed to the right side of Table 27, were historical in nature to a lesser degree than those of other operational areas.

Four pairs of distributions of the items of information on the recordation scale differed significantly. Items in the area of staff were recorded to a lesser extent than items in the areas of environment, finance, students and facilities (Table 23).

TABLE 16

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE RECORDATION SCALE PER OPERATIONAL AREA

Distribution	Alternative on the recordation scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	To a large extent	59	84	26	44	20	7	240
	To a fair extent	34	70	13	24	21	9	171
	To a small extent	23	69	7	15	15	2	131
	Not at all	32	150	15	25	17	7	246
	Total	148	373	61	108	73	25	788
Percentage	To a large extent	40%	23%	43%	41%	27%	28%	30%
	To a fair extent	23	19	21	22	29	36	22
	To a small extent	16	19	11	14	21	8	17
	Not at all	22	40	25	23	23	28	31
	Total	100	100	100	100	100	100	100

TABLE 17

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE SOURCE SCALE PER OPERATIONAL AREA

Distribution	Source	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Staff	118	267	31	62	43	11	532
	Community	18	43	10	30	12	10	123
	Environment	11	41	12	10	12	3	89
	Miscellaneous	3	22	8	6	5	1	45
	Total	150	373	61	108	72	25	789
Percentage	Staff	79%	72%	51%	57%	60%	44%	67%
	Community	12	12	16	28	17	40	16
	Environment	7	11	20	9	17	12	11
	Miscellaneous	2	6	13	6	7	4	6
	Total	100	100	100	100	100	100	100

TABLE 18

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE SOURCE RELIABILITY SCALE PER OPERATIONAL AREA

Distribution	Alternative on the reliability scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Very good	87	172	28	54	32	11	384
	Good	56	156	25	45	30	7	319
	Poor	2	18	6	4	2	4	36
	Very poor		6	1	3	1		11
	Unknown	4	15	2	1	5	3	30
	Total	149	367	62	107	70	25	780
Percentage	Very good	58%	47%	45%	50%	46%	44%	49%
	Good	38	43	40	42	43	28	41
	Poor	1	5	10	4	3	16	5
	Very poor		2	2	3	1		1
	Unknown	3	4	3	1	7	12	4
	Total	100	100	100	100	100	100	100

TABLE 19

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE ACCESSIBILITY SCALE PER OPERATIONAL AREA

Distribution	Alternative on the accessibility scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Very easily	64	129	20	44	22	5	284
	Easily	47	140	17	35	25	12	276
	With some difficulty	33	85	18	23	21	6	186
	With great difficulty	7	23	7	6	5	2	50
	Total	151	377	62	108	73	25	796
Percentage	Very easily	42%	34%	32%	41%	30%	20%	36%
	Easily	31	37	27	32	34	48	35
	With some difficulty	22	23	29	21	29	24	23
	With great difficulty	5	6	11	6	7	8	6
	Total	100	100	100	100	100	100	100

TABLE 20

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE HISTORICAL SCALE PER OPERATIONAL AREA

Distribution	Alternative on the historical scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Historical	117	274	45	86	45	22	589
	Non-historical	34	103	17	22	28	3	207
	Total	151	377	62	108	73	25	796
Percentage	Historical	78%	73%	73%	80%	62%	88%	74%
	Non-historical	22	27	27	20	38	12	26
	Total	100	100	100	100	100	100	100

TABLE 21

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE STATISTICAL SCALE PER OPERATIONAL AREA

Distribution	Alternative on the statistical scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Statistical	43	29	37	58	12	9	188
	Non-statistical	108	348	25	50	61	16	608
	Total	151	377	62	108	73	25	796
Percentage	Statistical	28%	8%	60%	54%	16%	36%	24%
	Non-statistical	72	92	40	46	84	64	76
	Total	100	100	100	100	100	100	100

TABLE 22

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE UTILIZATION SCALE PER OPERATIONAL AREA

Distribution	Alternative on the utilization scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	To a large extent	103	198	37	68	31	10	447
	To a fair extent	32	124	19	27	29	8	239
	To a small extent	12	35	4	4	6	6	67
	Not at all	2	12	2	5	2	1	24
	Total	149	369	62	104	68	25	777
Percentage	To a large extent	69%	54%	60%	65%	46%	40%	58%
	To a fair extent	21	34	31	26	43	32	31
	To a small extent	8	9	6	4	9	24	9
	Not at all	1	3	3	5	3	4	3
	Total	100	100	100	100	100	100	100

TABLE 23

D FOR EACH PAIR OF DISTRIBUTIONS ON THE RECORDATION SCALE

	Finance	Students	Facilities	Curriculum	Staff
Environ-ment	.146	.119	.127	.078	.227*
Finance		.030	.019	.152	.226*
Students			.015	.125	.216*
Facilities				.133	.217*
Curriculum					.169

*Significant

Six pairs of distributions of the items of information on the source scale differed significantly. Items of information originated from an internal source more frequently: (a) in the area of students than in the areas of environment, finance and facilities, (b) in the area of staff than in the areas of environment and finance, and (c) in the area of curriculum than in the area of environment (Table 24).

No difference was found, among the operational areas taken in pairs, in the distributions of the items of information on the source reliability scale (Table 25).

TABLE 24

D** FOR EACH PAIR OF DISTRIBUTIONS ON THE SOURCE SCALE

	Staff	Curriculum	Facilities	Finance	Environment
Students	.042	.161	.195*	.218*	.344*
Staff		.119	.153	.176*	.302*
Curriculum			.081	.057	.183*
Facilities				.128	.150
Finance					.127

*Significant
**For the calculation of D, the frequencies classified under "miscellaneous" were excluded.

TABLE 25

D** FOR EACH PAIR OF DISTRIBUTIONS ON THE SOURCE RELIABILITY SCALE

	Facilities	Curriculum	Staff	Finance	Environment
Students	.091	.108	.111	.133	.168
Facilities		.020	.021	.051	.116
Curriculum			.022	.071	.136
Staff				.048	.114
Finance					.065

**For the calculation of D, the frequencies classified under "unknown" were excluded.

Two pairs of distributions of the items of information on the accessibility scale differed significantly. Items of information in the area of environment were less accessible than items in the areas of students and facilities (Table 26).

TABLE 26

D FOR EACH PAIR OF DISTRIBUTIONS ON THE ACCESSIBILITY SCALE

	Facilities	Staff	Finance	Curriculum	Environment
Students	.016	.082	.138	.122	.224*
Facilities		.065	.135	.106	.207*
Staff			.117	.070	.142
Finance				.047	.123
Curriculum					.101

*Significant

Two pairs of distributions of the items of information on the historical scale differed significantly. The information in the area of curriculum was historical in nature to a lesser degree than that in the areas of environment and facilities (Table 27).

TABLE 27

D FOR EACH PAIR OF DISTRIBUTIONS ON THE HISTORICAL SCALE

	Facilities	Students	Staff	Finance	Curriculum
Environment	.084	.105	.153	.154	.264*
Facilities		.021	.070	.070	.180*
Students			.048	.049	.158
Staff				.001	.110
Finance					.109

*Significant

Eleven pairs of distributions of the items of information on the statistical scale differed significantly. Items of information were statistical in nature to a greater degree: (a) in both the areas of finance and facilities than in the four remaining operational areas, (b) in the area of environment than in the areas of staff and curriculum, and (c) in the area of students than in the area of staff (Table 28).

Five pairs of distributions of the items of information on the utilization scale differed significantly. Items of information were used to a lesser extent: (a) in the area of environment than in the areas of students, facilities and finance, and (b) in the area of curriculum

than in the areas of students and facilities (Table 29).

TABLE 28

D FOR EACH PAIR OF DISTRIBUTIONS ON THE STATISTICAL SCALE

	Facilities	Environment	Students	Curriculum	Staff
Finance	.060	.237*	.312*	.432*	.520*
Facilities		.177*	.252*	.373*	.460*
Environment			.075	.196*	.283*
Students				.120	.208*
Curriculum					.087

*Significant

TABLE 29

D FOR EACH PAIR OF DISTRIBUTIONS ON THE UTILIZATION SCALE

	Facilities	Finance	Staff	Curriculum	Environment
Students	.037	.095	.155	.235*	.291*
Facilities		.057	.117	.198*	.254*
Finance			.060	.141	.197*
Staff				.081	.153
Curriculum					.162

*Significant

Description of the Characteristics of the Decisions

The findings concerning the decisions reported by the superintendents are analyzed below according to the terms of research questions 4.1 and 4.2.

Research question 4.1. What is the distribution of the decisions on each of the following scales: (a) operational area, (b) individual or group decision, and (c) precedent?

The distribution of the decisions on each of these scales is presented in Tables 30 to 32.

Forty-nine percent of the decisions were made in the area of staff. Only 2% of the decisions were made in the area of environment. The percentage of decisions in each of the four remaining operational areas varied between 10% and 16% (Table 30).

TABLE 30

DISTRIBUTION OF THE DECISIONS IN EACH OPERATIONAL AREA

Area	f	%
Students	24	16
Staff	74	49
Finance	16	11
Facilities	19	13
Curriculum	15	10
Environment	3	2
Total	151	100

There were few decisions made by the superintendents themselves without consultation. Sixty percent of the decisions were made by the superintendents with consultation and 24% were made by the school boards (Table 31).

TABLE 31

DISTRIBUTION OF THE DECISIONS ON THE INDIVIDUAL OR GROUP DECISION SCALE

Alternatives	f	%
Individual decision without consultation	5	3
Individual decision with consultation	91	60
Other group decision	10	7
Board decision	36	24
Miscellaneous	9	6
Total	151	100

Seventy-three percent of the decisions were not based on precedents. There were one or two precedents in 12% of the decisions and three or more precedents in only 5% of the decisions. There were also 10% of the decisions with precedents where the number of precedents was not specified (Table 32).

TABLE 32

DISTRIBUTION OF THE DECISIONS ON THE PRECEDENT SCALE

Number of precedents	f	%
None	110	73
1 or 2	18	12
3 or more	8	5
Some precedents but number unspecified	15	10
Total	151	100

Research question 4.2. What are the mean and the standard deviation of the duration of the decision-making process?

The mean number of days and the standard deviation of the duration of the decision-making process were 50 and 70 respectively. It was impossible to establish the duration of the decision-making process in twenty-eight, or 19% of the cases.

Characteristics of the Decisions per Operational Area

In this section, the findings related to the characteristics of the decisions are presented in terms of research questions 5.1, 5.2 and 5.3.

Research question 5.1. In each operational area, what is the percentage of the items of information required to make decisions in the same area? For example, what percentage of items of information about students are required for decisions concerning students?

The distribution of the items of information in each operational area by operational area of decisions is presented in Table 33.

In all areas, except environment, items of information required for a decision belong, in the majority of cases, in the same operational area as that of the decision. The percentages of the items of information in each operational area for decisions made in the corresponding area were, in decreasing order: (a) staff, 87%, (b) facilities, 74%, (c) finance, 66%, (d) students, 58%, (e) curriculum, 58%, and (f) environment, 20%.

Research question 5.2. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following scales: (a) individual or group decision, and (b) precedent?

The distribution of the items of information per operational area on each of these scales is presented in Tables 34 and 35 and the D for each pair of distributions is reported in Tables 36 and 37.

TABLE 33

DISTRIBUTION OF THE ITEMS OF INFORMATION PER AREAS OF DECISION AND OF INFORMATION

Distribution	Decision area	Operational area (Information)						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Students	88	10		6	4		108
	Staff	19	327	13	5	16	5	385
	Finance	2	12	40	10	8	3	75
	Facilities	29	7	6	80	2	11	135
	Curriculum	12	11	2	7	42	1	75
	Environment	1	10	1		1	5	18
	Total	151	377	62	108	73	25	796
Percentage	Students	58%	3%	%	6%	5%	%	14%
	Staff	13	87	20	5	22	20	48
	Finance	1	3	66	9	11	12	9
	Facilities	19	2	10	74	3	44	17
	Curriculum	8	3	3	6	58	4	9
	Environment	1	3	2		1	20	2
	Total	100	100	100	100	100	100	100

TABLE 34

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE INDIVIDUAL OR GROUP DECISION SCALE PER OPERATIONAL AREA

Distribution	Individual or group decisions	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Individual decision without consultation	6	13		3	2		24
	Individual decision with consultation	93	242	24	50	47	12	468
	Other group decision	6	12	3	10	13	3	47
	Board decision	43	68	21	43	8	7	190
	Miscellaneous	3	42	14	2	3	3	67
	Total	151	377	62	108	73	25	796
Percentage	Individual decision without consultation	4%	3%	%	3%	3%	%	3%
	Individual decision with consultation	62	64	39	46	64	48	59
	Other group decision	4	3	5	9	18	12	6
	Board decision	28	18	34	40	11	28	24
	Miscellaneous	2	11	23	2	4	12	8
	Total	100	100	100	100	100	100	100

TABLE 35

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE PRECEDENT SCALE PER OPERATIONAL AREA

Distribution	Alternative on the precedent scale	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	None	90	297	43	60	52	14	556
	1 or 2	23	27	11	18	13	4	96
	3 or more	19	24	3	12		2	60
	Number unspecified	19	29	5	18	8	5	84
	Total	151	377	62	108	73	25	796
Percentage	None	60%	79%	69%	56%	71%	56%	70%
	1 or 2	15	7	18	17	18	16	12
	3 or more	13	6	5	11		8	8
	Number unspecified	13	8	8	17	11	20	11
	Total	100	100	100	100	100	100	100

Seven pairs of distributions of the items of information on the individual or group decision scale differed significantly. Items of information were required for individual decisions to a greater extent: (a) in the area of curriculum than in the areas of students, environment, finance, and facilities, and, (b) in the area of staff than in the areas of environment, facilities and finance (Table 36).

TABLE 36

D** FOR EACH PAIR OF DISTRIBUTIONS ON THE INDIVIDUAL OR GROUP DECISION SCALE

	Staff	Students	Environ-ment	Faci-lities	Finance
Cur-riculum	.089	.176*	.204*	.291*	.323*
Staff		.092	.216*	.261*	.261*
Students			.123	.169	.169
Environ-ment				.087	.119
Facilities					.032

*Significant
**For the calculation of D, the frequencies classified as "miscellaneous" were excluded.

One pair of distributions of the items of information on the precedent scale differed significantly. That is, information in the area of staff was required more frequently for decisions with a fewer number of precedents than information in the area of facilities (Table 37).

TABLE 37

D** FOR EACH PAIR OF DISTRIBUTIONS ON THE PRECEDENT SCALE

	Curriculum	Finance	Environment	Students	Facilities
Staff	.069	.099	.153	.172	.187*
Curriculum		.053	.100	.144	.133
Finance			.054	.091	.088
Environment				.044	.033
Students					.015

*Significant
**For the calculation of D, the frequencies classified under "number unspecified" were excluded.

Research question 5.3. Are there significant differences among operational areas taken in pairs, in the duration of the decision-making process?

The mean duration of the decision-making process in each operational area is presented in Table 38. The standard score for each difference in mean is given in Table 39.

The mean duration of the decision-making process in the last column of Table 38 is different from the mean duration indicated in the findings related to research question 4.2, since the former figure is based on the number of items of information and the latter on the number of decisions. The fluctuation is due to the fact that the number of items differ from one decision to the other.

TABLE 38

MEAN NUMBER OF DAYS OF THE DURATION OF THE DECISION-MAKING PROCESS IN EACH OPERATIONAL AREA

	Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Mean	37	48	40	42	43	27	44
N (items)	118	318	44	75	56	19	630

One significant difference was found among operational areas in the mean duration of the decision-making process. Items in the area of staff were required for decisions having a longer process than those in the area of environment (Table 39).

TABLE 39

STANDARD SCORE FOR EACH DIFFERENCE IN THE MEAN NUMBER OF DAYS OF THE DURATION OF THE DECISION-MAKING PROCESS

	Curriculum	Facilities	Finance	Students	Environment
Staff	.09	.09	.12	.17	.34*
Curriculum		.01	.04	.09	.25
Facilities			.03	.08	.25
Finance				.05	.22
Students					.17

*Significant

Demographic Characteristics per Operational Area

The findings related to the demographic characteristics of the superintendents and of the school systems are reported in this section according to the terms of research questions 6.1, 6.2, and 6.3.

Research question 6.1. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following demographic scales pertaining to the superintendents: (a) method of appointment, (b) previous teaching level, and (c) previous teaching area?

The distribution of the items of information in each operational area on these scales is presented in Tables 40 to 42 and the D for each pair of distributions is reported in Tables 43 to 45.

No difference was found, among the operational areas taken in pairs, in the distribution of the items of information on the method of appointment scale (Table 43).

Five pairs of distributions of the items of information on the previous teaching level scale differed significantly. Items of information were required by superintendents with a previous teaching experience at the elementary level to a greater extent: (a) in the area of environment than in the areas of staff, students, facilities, and finance, and (b) in the area of curriculum than in the area of finance (Table 44).

Two pairs of distributions of the items of information on the previous teaching area scale differed significantly. Items of information were required by superintendents with previous teaching experience in the arts and humanities to a greater extent in the area of finance than in the areas of staff and facilities (Table 45).

TABLE 40

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE METHOD OF APPOINTMENT SCALE PER OPERATIONAL AREA

Distribution	Method of Appointment	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Department of Education	33	68	11	23	15	5	155
	School Board Members	118	303	51	85	58	20	641
	Total	151	377	62	108	73	25	796
Percentage	Department of Education	22%	18%	18%	21%	21%	20%	19%
	School Board Members	78	82	82	79	79	80	81
	Total	100	100	100	100	100	100	100

TABLE 41

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE PREVIOUS TEACHING LEVEL SCALE PER OPERATIONAL AREA

Distribution	Previous Teaching Level	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Elementary	33	95	6	18	21	11	184
	El. & Sec.	12	22	5	14	11	1	65
	Secondary	103	257	41	70	41	13	525
	Miscellaneous	3	3	10	6			22
	Total	151	377	62	108	73	25	796
Percentage	Elementary	22%	25%	10%	17%	29%	44%	23%
	El. & Sec.	8	6	8	13	15	4	8
	Secondary	68	68	66	65	56	52	66
	Miscellaneous	2	1	16	6			3
	Total	100	100	100	100	100	100	100

TABLE 42

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE PREVIOUS TEACHING AREA SCALE PER OPERATIONAL AREA

Distribution	Previous teaching area	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Arts & Humanities	62	144	41	42	39	11	339
	Vocat. & Bus.		13		5			18
	Math. & Science	35	117	14	35	23	7	231
	Miscellaneous	52	88	4	15	7	6	172
	Total	149	362	59	97	69	24	760
Percentage	Arts & Humanities	42%	40%	69%	43%	57%	46%	45%
	Vocat. & Bus.		4		5			2
	Math. & Science	23	32	24	36	33	29	30
	Miscellaneous	35	24	7	15	10	25	23
	Total	100	100	100	100	100	100	100

TABLE 43

D FOR EACH PAIR OF DISTRIBUTIONS ON THE METHOD OF APPOINTMENT SCALE

	Facilities	Curriculum	Environment	Staff	Finance
Students	.006	.013	.019	.035	.041
Facilities		.007	.013	.030	.036
Curriculum			.005	.022	.028
Environment				.017	.023
Staff					.006

TABLE 44

D** FOR EACH PAIR OF DISTRIBUTIONS ON THE PREVIOUS TEACHING LEVEL SCALE

	Curriculum	Staff	Students	Facilities	Finance
Environment	.152	.186*	.217*	.264*	.325*
Curriculum		.126	.134	.125	.227*
Staff			.031	.078	.139
Students				.047	.108
Facilities					.102

*Significant
**For the calculation of D, the frequencies classified under "miscellaneous" were excluded.

TABLE 45

D** FOR EACH PAIR OF DISTRIBUTIONS ON THE PREVIOUS TEACHING AREA SCALE

	Students	Curriculum	Environment	Staff	Facilities
Finance	.106	.116	.134	.220*	.233*
Students		.010	.028	.114	.127
Curriculum			.018	.103	.117
Environment				.086	.099
Staff					.013

*Significant
**For the calculation of D, the frequencies classified under "miscellaneous" were excluded.

Research question 6.2. Are there significant differences among operational areas taken in pairs, in the mean of any of the following demographic characteristics of superintendents: (a) age, (b) number of years associated with education, (c) number of years of experience as superintendent, (d) number of years of experience as principal, and (e) number of years of formal education?

The means of these demographic characteristics per operational area are presented in Table 46. The value of the standard score for each difference in means is reported in Tables 47 to 51.

TABLE 46

MEAN OF VARIOUS INDIVIDUAL CHARACTERISTICS PER OPERATIONAL AREA

Characteristic	Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Age	51.3	46.2	47.1	49.9	46.7	46.0	47.8
Years in Education	30.0	24.7	25.0	27.1	25.1	23.8	26.1
Experience as superintendent	5,0	3.1	3.7	4.2	4.0	4.4	3.8
Experience as principal	8.7	7.3	7.1	9.8	8.9	7.6	8.0
Formal Education	17.8	17.7	17.9	18.1	18.0	18.0	17.8
N	151	377	62	108*	73*	25	796*

*The number of items in the areas of facilities and curriculum, and on the total for the last row variable was 107, 68 and 790 respectively since one subject did not answer to the instrument question 2.6.

Eight significant differences were found among operational areas taken in pairs, in the mean age of the superintendents. Items of information were required by older superintendents in the areas of students and facilities to a greater extent than in the remaining four operational areas (Table 47).

TABLE 47

STANDARD SCORE FOR EACH DIFFERENCE IN THE MEAN AGE

	Facilities	Finance	Curriculum	Staff	Environment
Students	.17	.52*	.57*	.63*	.66*
Facilities		.34*	.40*	.45*	.49*
Finance			.05	.11	.15
Curriculum				.06	.09
Staff					.04

*Significant

Seven significant differences were found among operational areas taken in pairs, in the mean number of years the superintendents have been associated with education. Items of information were required by superintendents with more experience in education to a greater extent: (a) in the area of students than in any of the five remaining operational areas, and (b) in the area of facilities than in the areas of staff and environment (Table 48).

TABLE 48

STANDARD SCORE FOR EACH DIFFERENCE IN THE MEAN NUMBER OF YEARS IN EDUCATION

	Facilities	Curriculum	Finance	Staff	Environment
Students	.34*	.59*	.60*	.64*	.74*
Facilities		.24	.25	.29*	.39*
Curriculum			.01	.05	.15
Finance				.04	.14
Staff					.10

*Significant

Four significant differences were found among operational areas taken in pairs, in the mean number of years of experience as superintendent. Items of information were required by superintendents with less experience as superintendent to a greater extent: (a) in the area of staff than in the areas of students, environment and facilities, and (b) in the area of finance than in the area of students (Table 49).

TABLE 49

STANDARD SCORE FOR EACH DIFFERENCE IN THE MEAN NUMBER OF YEARS OF EXPERIENCE AS SUPERINTENDENT

	Environ-ment	Faci-lities	Cur-riculum	Finance	Staff
Students	.14	.20	.26	.33*	.49*
Environ-ment		.06	.12	.19	.34*
Facilities			.06	.12	.28*
Curriculum				.06	.22
Finance					.16

*Significant

Four significant differences were found among operational areas taken in pairs, in the mean number of years of previous experience of the superintendents as principal. Items of information were required by superintendents with more previous experience as principal to a greater extent: (a) in the area of facilities than in the areas of finance, staff and environment, and (b) in the area of curriculum than in the area of finance (Table 50).

TABLE 50

STANDARD SCORE FOR EACH DIFFERENCE IN THE MEAN NUMBER OF YEARS OF EXPERIENCE AS PRINCIPAL

	Curriculum	Students	Environment	Staff	Finance
Facilities	.14	.17	.36*	.41*	.45*
Curriculum		.03	.22	.27	.31*
Students			.19	.24	.27
Environment				.05	.08
Staff					.03

* Significant

One significant difference was found among operational areas taken in pairs, in the mean number of years of formal education of the superintendents. Items of information were required by superintendents with fewer years of formal education to a greater extent in the area of staff than in the area of facilities (Table 51).

TABLE 51

STANDARD SCORE FOR EACH DIFFERENCE IN THE MEAN NUMBER OF YEARS OF FORMAL EDUCATION

	Environ-ment	Cur-riculum	Finance	Students	Staff
Faci-lities	.07	.11	.14	.24	.31*
Environ-ment		.04	.07	.16	.24
Cur-riculum			.03	.13	.20
Finance				.10	.17
Students					.08

*Significant

Research question 6.3. Does the distribution of the items of information differ significantly among operational areas taken in pairs, on any of the following demographic scales pertaining to the school systems: (a) size, (b) elementary-secondary, and (c) rural-urban.

The distribution of the items of information per operational area on each of these scales is presented in Tables 52 to 54 and the D for each pair of distributions is given in Tables 55 to 57.

TABLE 52

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE SCHOOL SYSTEM SIZE SCALE PER OPERATIONAL AREA

Distribution	Number of students	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Fewer than 10,000	104	260	26	48	48	5	491
	10,000 - 44,999	43	115	32	57	25	20	292
	45,000 and over	4	2	4	3			13
	Total	151	377	62	108	73	25	796
Percentage	Fewer than 10,000	69%	69%	42%	44%	66%	20%	62%
	10,000 - 44,999	28	31	52	53	34	80	37
	45,000 and over	3	1	6	3			2
	Total	100	100	100	100	100	100	100

TABLE 53

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE SECONDARY-ELEMENTARY SCHOOL SYSTEM SCALE PER OPERATIONAL AREA

Distribution	Elementary or secondary	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	Secondary	31	14	1	10	8		64
	Mixed	98	279	54	79	46	20	576
	Elementary	22	84	7	19	19	5	156
	Total	151	377	62	108	73	25	796
Percentage	Secondary	21%	4%	2%	9%	11%	%	8%
	Mixed	65	74	87	73	63	80	72
	Elementary	15	22	11	18	26	20	20
	Total	100	100	100	100	100	100	100

TABLE 54

DISTRIBUTION OF THE ITEMS OF INFORMATION ON THE URBAN-RURAL SCHOOL SYSTEM SCALE PER OPERATIONAL AREA

Distribution	Proportion of rural population	Operational area						
		Stud.	Staff	Fin.	Fac.	Curr.	Env.	Total
Frequency	10% or less	79	181	28	54	35	19	396
	11% to 50%	34	84	20	24	16	2	180
	51% to 80%	35	89	10	27	12	1	174
	81% and over	3	23	4	3	10	3	46
	Total	151	377	62	108	73	25	796
Percentage	10% or less	52%	48%	45%	50%	48%	76%	50%
	11% to 50%	23	22	32	22	22	8	23
	51% to 80%	23	24	16	25	16	4	22
	81% and over	2	6	6	3	14	12	6
	Total	100	100	100	100	100	100	100

Eleven pairs of distributions of the items of information on the school system size scale differed significantly among the operational areas taken in pairs. Items of information were required in larger school systems to a greater extent: (a) in the area of environment than in any of the remaining operational areas, and (b) in the areas of finance and facilities than in the areas of staff, students and curriculum (Table 55).

TABLE 55

D FOR EACH PAIR OF DISTRIBUTIONS ON THE SCHOOL SYSTEM SIZE SCALE

	Students	Curriculum	Facilities	Finance	Environment
Staff	.021	.032	.245*	.270*	.490*
Students		.031	.244*	.269*	.489*
Curriculum			.213*	.238*	.458*
Facilities				.037	.244*
Finance					.219*

*Significant

Two pairs of distributions of the items of information on the secondary-elementary school system scale differed significantly among operational areas taken in pairs. Items of information were required in school

systems with a higher proportion of secondary schools to a greater extent in the areas of students than in the areas of finance and environment (Table 56).

TABLE 56

D FOR EACH PAIR OF DISTRIBUTIONS ON THE SECONDARY-ELEMENTARY SCHOOL SYSTEM SCALE

	Curriculum	Facilities	Staff	Finance	Environment
Students	.115	.113	.168	.189*	.205*
Curriculum		.084	.072	.147	.110
Facilities			.055	.076	.093
Staff				.110	.037
Finance					.087

*Significant

Five pairs of distributions of the items of information on the urban-rural school system scale differed significantly among operational areas taken in pairs. Items of information were required in urban school systems to a greater extent in the area of environment than in any of the five remaining operational areas (Table 57).

TABLE 57

D FOR EACH PAIR OF DISTRIBUTIONS ON THE URBAN-RURAL SCHOOL SYSTEM SCALE

	Students	Facilities	Staff	Curriculum	Finance
Environment	.237*	.260*	.280*	.281*	.308*
Students		.026	.045	.117	.072
Facilities			.033	.109	.052
Staff				.076	.071
Curriculum					.076

*Significant

Summary

Almost half of the information which was required by superintendents to make the decisions reported was included in the area of staff. This area was considerably more important in terms of information requirements than the following areas, listed in decreasing order: students, facilities, curriculum, finance and environment.

Approximately half of the items of information were described as being either recorded to a large extent or to a fair extent, while 31% of the items were not recorded at all.

The staff was the source of information two-thirds of the time and the source was described by the superintendents

as having a very good or good reliability in over 90% of the cases.

Over 70% of the items were found very easily or easily accessible and 89% were used either to a large or to a fair extent.

In approximately three-quarters of the cases, the information was historical in nature, and was not expressed in statistical form.

Almost half of the decisions reported were made in the area of staff. Only 2% of the decisions were made in the area of environment. Each of the other areas included between 10% and 16% of the decisions.

Decisions were made by superintendents with consultation in 60% of the cases. Twenty-four percent of the decisions were made by the board and only 3% were made by the superintendents without consultation. Seven percent of the decisions were made by other groups and 6% by miscellaneous means.

Almost three-quarters of the decisions did not have any precedents. One or two precedents were said to exist for 12% of the decisions, and three or more precedents for 5% of the decisions. There were also 10% of the decisions with precedents where the number of precedents was not specified.

The mean number of days and the standard deviation of the duration of the decision making process were 50 and

73 respectively.

Eleven pairs of distributions of items of information on the statistical scale differed significantly among operational areas, seven on the individual or group decision scale, six on the source scale, five on the utilization scale, four on the recordation scale, two on the accessibility and historical scales, one on the precedent scale and in the duration of the decision-making process, and none on the source reliability scale.

CHAPTER V

DISCUSSION OF THE RESULTS

The findings are discussed in this chapter in the same order as they were presented in Chapter IV, except that the findings related to research questions 1.1, 4.1(a) and 5.1 are analyzed as a whole in the first part of the chapter.

The discussion, especially that made in the third, fifth and sixth parts, aims at the formulation of hypotheses, an attempt consonant with the functions of an exploratory study (Davitz & Davitz, 1967, pp. 5-6; Selltiz et al., 1959, pp. 51-52).

Information and Decisions in Each Major Operational Area

The principal problem of this study was to determine the information required by school superintendents for making important decisions in major operational area in educational administration. These areas were divided as follows: (a) students, (b) staff, (c) finance, (d) facilities, (e) curriculum, and (f) environment.

Forty-seven percent of the total number of the items of information were classified in the area of staff (Table 8) and 49% of the total number of the decisions reported were made in the same area (Table 30). The percentage

distributions of the 796 items of information and of the 151 decisions are presented in Figure 3.

This figure illustrates four findings: (a) the percentage distributions of the decisions and of the items of information were very similar, (b) the area of staff included a much higher proportion of decisions and of items of information than any of the remaining areas, (c) the percentages of the decisions and of the items of information in the areas of students, facilities, curriculum and finance did not differ to a great extent, and (d) the area of environment included only a small proportion of decisions and of items of information.

The greatest difference between the percentages of the decisions and of items of information in any area was 3%. The close similarity in the percentage distributions of the decisions and of the items of information may be due to the fact that, for all areas except environment, the items of information in a given area were required mainly for decisions made in the corresponding area as indicated in the findings pertaining to research question 5.1. The number of items of information belonging to the same area as the decision for which they were required was as follows: students, 88 out of 151 items; staff, 327 out of 377 items; finance, 40 out of 62 items; facilities, 80 out of 108 items; curriculum, 42 out of 73 items; environment, 5 out of 25 items (Table 33). On the whole, 582 items of

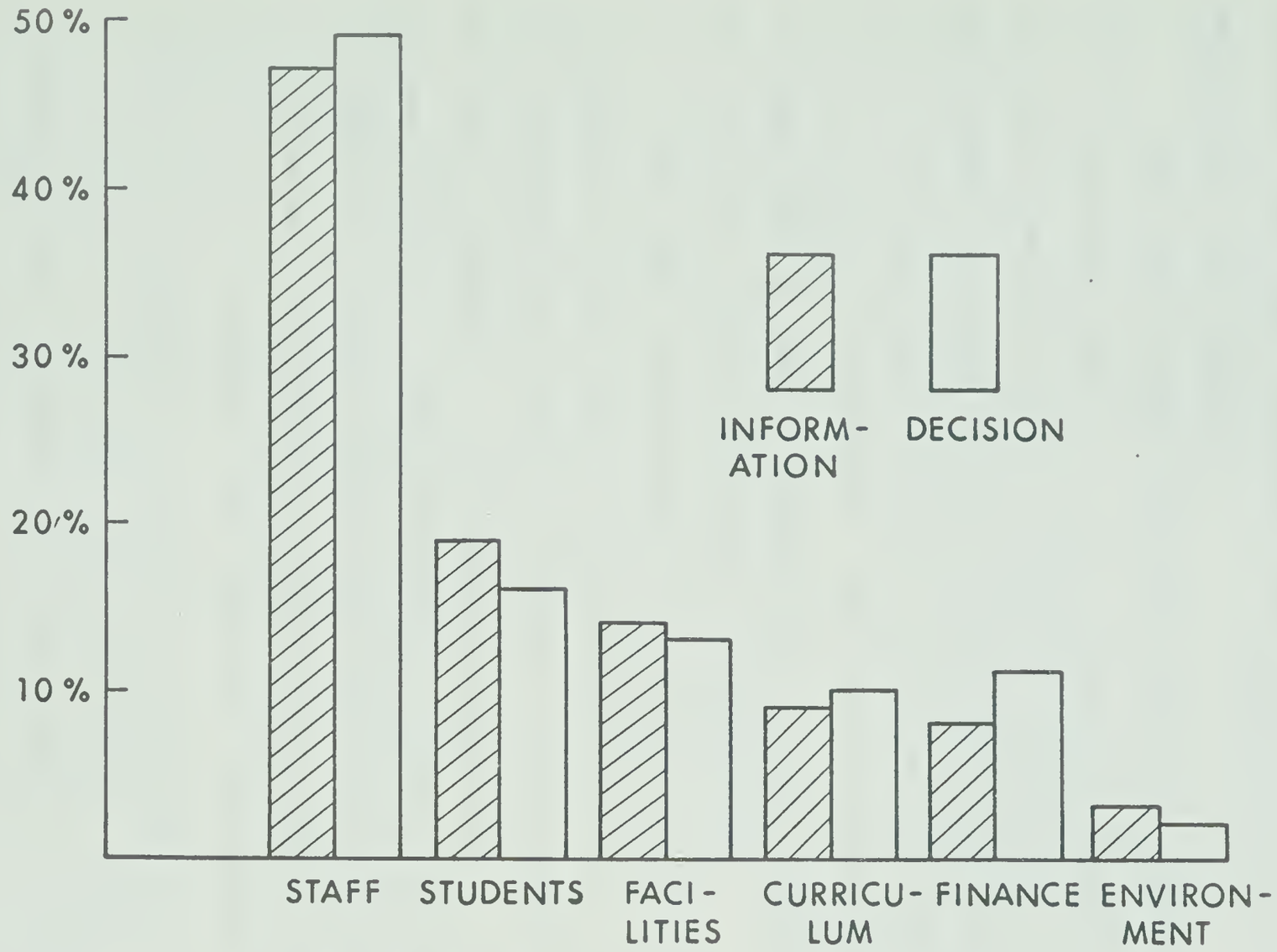

Figure 3

PERCENTAGE DISTRIBUTIONS OF THE 796 ITEMS OF INFORMATION AND OF THE 151 DECISIONS IN EACH OPERATIONAL AREA

information, or 73% of the total of 796, were found to belong to the same operational area as the decision for which they were required.

The area of staff included 49% of the total number of the decisions and 47% of the items of information. On the other hand the areas of students, facilities, curriculum and finance included between 10% and 16% of the total number of the decisions and between 8% and 19% of the total number of the items of information. The area of environment included only 2% and 3% respectively of total number of the decisions and of the items of information.

The small percentages of decisions and of items of information in the area of environment should not necessarily be interpreted as a lack of concern of the superintendents for the environment. As indicated in the note at the bottom of Table 4, items describing opinions and reactions of others on certain matters and items describing outside practices were classified on the basis of subject matter rather than of origin. This means that the opinions and reactions of parents or trustees were generally classified in operational areas other than environment. These small percentages may illustrate why many authors in education information systems tend to exclude the area of community in their classification of the operational areas.

Characteristics of the Information

The findings relative to the characteristics of the information tend to contradict most of the experts' opinions on the subject.

The information was reported as being recorded to a large extent or to a fair extent in 52% of the total number of items of information (Table 9). This would appear to contradict Forrester's (1967, pp. 276-277) opinion in this regard.

Crowley (1966, pp. 16-18) feels that most of the information required for managerial decisions comes from external sources; in this study, the community and the environment were the source of only 16% and 11% of the items of information (Table 10).

According to Yovitz and Ernst (1967, p. 285) and Dearden (1967, p. 186) most of the information would not be historical in nature but 74% of the items of information reported in this investigation were historical in nature (Table 13).

According to Ackoff (1967, p. B-148) decision makers may be burdened by information overload and, consequently, use relevant information only to a small extent. This opinion does not appear to be supported by present findings since 89% of the items of information were said to be used either to a large or to a fair extent (Table 15).

Seventy-one percent of the items of information were reported as either easily or very easily accessible (Table 12), although Cyert and March (1963, p. 110) feel that frequently the information is not available to the decision-makers. However, Yovitz and Ernst (1967, p. 284) and Ackoff (1967, pp. B147-149) hold the opposite view which tends to be supported by the findings of this study.

Yovitz's and Ernst's (1967, pp. 285-286) opinion that the information required by managers is not generally quantifiable tends to be corroborated by the present findings since only 24% of the items were expressed in statistical form (Table 14).

According to Emory and Niland (1968, p. 52) the quality of the information depends on the reliability of its source. If they are correct, the findings would suggest that the information required by the superintendents who participated in this study was very good or even excellent, since the source reliability of 90% of the items of information was considered by the respondents as either good or very good, whereas it was considered as either poor or very poor in 6% of the cases (Table 11).

Characteristics of the Information in Each Operational Area

An analysis of the characteristics of the information in the area of students, staff, facilities, and curriculum (which included 89% of the total number of items) suggests

that these characteristics, except the source, are positively related. For example, if an item of information is recorded to a large extent, it also tends to be very easily accessible, to be used to a large extent, to have a very good source reliability, to be historical in nature and to be expressed in statistical form. In effect, the items of information in the areas of students and facilities had a higher value of central tendency than those in the areas of staff and curriculum on the recordation, source reliability, accessibility and utilization scales, and a higher proportion of these items were historical in nature and expressed in statistical form.

Furthermore, if information with these characteristics is preferable in decision-making, decisions based mainly on information in the areas of students and facilities may be easier to make and/or may be of better quality than those based mainly on information in the areas of staff and curriculum.

Before terminating the analysis of the characteristics of the information in each operational area, the findings on the recordation scale may be discussed further.

According to the findings related to research question 3.1(a), superintendents, when using staff information, were relying on a greater proportion of non-recorded information (Table 23). It is possible that in view of the difficulties involved in the evaluation of staff performance,

school administrators may be reluctant to record such information. This hesitation may be reinforced for example by teacher resistance to merit-pay ratings (e.g. ATA, 1964, pp. 123-124).

Characteristics of the Decisions

The distribution of the decisions among the operational areas was similar to that of the information, as indicated at the beginning of this chapter.

The high proportion of decisions based on no precedent or on one or two precedents only (Table 32) suggests that the decisions reported by the superintendents were, in most cases, unstructured or in the nature of decisions typically made by top-level executives as suggested by Etzioni (1964, p. 30).

As indicated in the findings for research question 4.2, the standard deviation of the duration of the decision-making process scale was equal to 73 whereas the mean was only 50. This distribution skewed to the right is due to the fact that the decision-making process extended, in a few cases, over a long period of time.

Characteristics of the Decisions in Each Operational Area

As mentioned in the first part of this chapter there was a close relationship between the operational area in which a decision is made and that in which the information is required.

The items of information in the area of staff and curriculum were required to a greater extent than those in the areas of finance, facilities and environment for the decisions made by superintendents (Table 36). This relationship appears consistent with the general opinion that professional matters should be handled mainly by professional educators.

The items of information in the area of staff were required more frequently for decisions based on a lower number of precedents than items of information in the area of facilities (Table 37). Considering the fact that 87% of the information in the area of staff was required for decisions made in this area (Table 33), these findings suggest that the decisions in the area of staff were also based on a lower number of precedents. Further, considering the fact that 49% of the decisions reported were included in the area of staff (Table 30), one would expect these decisions to be of a repetitive nature. This is apparently not the case. Although superintendents were involved in a high proportion of staff decisions, these decisions did not have a large number of precedents.

The lower number of precedents in the area of staff may also be related to the fact that the information in this area was recorded to a lesser extent than in the other areas.

Items of information in the area of staff were required for decisions involving longer decision-making

process than was the case for information in the area of environment (Table 38). This may also be related to the finding pertaining to information in the area of staff analyzed on the recordation scale. Matters concerning staff may require a longer decision-making process because written or recorded evidence is more difficult to obtain.

Finally, the items of information in the area of curriculum tended to have the same characteristics as those in the area of staff (Tables 36, 37 and 39).

To summarize, the findings on the characteristics of the decision per operational area suggest that the items in the area of staff and to some extent those in the area of curriculum were required for decisions that were made mainly by superintendents, that had a lower number of precedents and that required a longer decision-making process. These findings may be related to the fact that the information in this area is not recorded to the same extent as in the other areas.

Demographic Characteristics in Each Operational Area

In view of the close relationship between the area in which a decision is made and the area in which the information is classified, the discussion of the findings relative to the description of the demographic variables in each operational area becomes irrelevant.

An example may serve to illustrate this point.

Two pairs of distributions differed significantly on the superintendents' previous teaching area scale. In one of these pairs of distributions, items in the area of finance were required to a greater extent than in the area of staff by superintendents with a background in arts and humanities as opposed to one in mathematics and science (Table 45).

These findings do not appear to conform to the phenomenon of selective perception (Dearbon and Simon, 1958). If such a phenomenon were present, one might expect, rather, that items of information in the area of finance would be required by superintendents with a background in mathematics and science and items in the area of staff, by superintendents with a background in arts and humanities.

The operational area in which the decision is made, rather than the personal background of the superintendents, appear to have an influence on the operational area in which the information is required. Superintendents, independent of their background, may not have had much choice as to the decisions they had to make or in which they were involved. In other words, the operational areas in which the decisions are made, and consequently, the operational areas in which the information is required depend on circumstances more than background.

Summary

The percentage distributions of the decisions and of the items of information were found to be very similar. The area of staff included a much higher proportion of decisions and of items of information than any of the remaining areas. The percentages of the decisions and of the items of information in the areas of students, facilities, curriculum and finance did not differ to a great extent. The area of environment included only a small proportion of decisions and of items of information.

The findings appear to contradict experts' opinion on the following characteristics of the information: (a) recordation, (b) historical, (c) utilization, (d) source, and (e) accessibility. There were no apparent contradictions on the following characteristics of information or of decisions: (a) statistical, (b) source reliability, (c) precedent, and (d) individual or group decision.

It could be hypothesized that: (a) the characteristics of the information, except the source, are positively correlated, and (b) the lower degree of recordation in the area of staff is attributed to the items of information concerning staff performance.

The items of information in the area of staff and, to some extent, those in the area of curriculum were recorded to a lower degree than those in other areas. They were generally required for decisions that were made mainly by

superintendents, that had a lower number of precedents and that required a longer decision-making process.

Circumstances, which command decisions, rather than demographic characteristics, appear to have an influence on the selection of the information in a given operational area.

CHAPTER VI

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Summary

Problem. Decision-making may be considered one of the major processes of administration. The description of the decision-making process generally includes the gathering of information as one of the major phases of the process. Increasing importance is now given to the gathering of information. The increasing importance given to this phase in the current literature is probably related to the growing interest in management information systems and to the development of computers as information processors.

The present study sought to determine the information required by school superintendents for making important decisions in major operational areas in educational administration.

The operational areas most often encountered in educational administration were: (a) students, (b) staff, (c) finance, (d) facilities, (e) curriculum, and (f) environment.

The study also included an examination of certain characteristics of the information and of the decisions, characteristics which were identified following a review of the literature on information systems. The characteristics

of the information were: (a) recordation, (b) source, (c) source reliability, (d) accessibility, (e) historical, (f) statistical, and (g) utilization. The characteristics of the decisions were: (a) individual or group decision, (b) precedent, and (c) duration of the decision-making process. These characteristics were described independent of the operational areas. An analysis was also made to determine whether the distributions of the items of information on each characteristic differed significantly among operational areas taken in pairs. A similar analysis was made with a number of demographic characteristics.

This study was limited mainly by the perception of the respondents and by the assumptions that the instrument yielded valid and reliable results.

Methods. The critical incident technique served to identify the information required by the respondents in making important decisions. This technique was used in preference to the decision classification approach and the information flow technique.

In the critical incident technique, the closer the incident to the date of reporting, the easier it is to remember the details of the incident. The respondents were therefore asked to describe the information required to make an important decision made within the previous week. A questionnaire was prepared, in both English and French, for

the purpose of this study.

The survey was directed to Canadian school systems of 5,000 students and over. One hundred and fifty-one questionnaires, or 61% of a total possible number of 248, were available for the analysis. The questionnaires were sent over a period of six weeks and returns were received during a period of sixteen weeks. The analysis was based mainly on data arranged in the form of nominal or ordinal scales. Three scales were constructed by making a content analysis of the items of information; these are the operational area, historical and statistical scales.

The data were interpreted by means of descriptive statistics. A value of D, as used in the Kolmogorov-Smirnov test, was calculated for the comparison of the scales among operational areas. The differences in means were transformed into standard scores. A D of .175 and over and a standard score of .28 and over, were retained as significant.

Results. The area of staff included 47% of the items of information reported by the superintendents. The percentages of the items in the five remaining operational areas varied from 19% in the area of students to 3% in the area of environment. The percentage distribution of the decisions among the operational areas was similar to that of the items of information. On the whole, 73% of the total number of items of information were found to belong to the

same operational area as the decision for which they were required.

Fifty-two percent of the items of information were said to be recorded either to a large or to a fair extent and 31% were said to be unrecorded.

The main source of information was the staff. It constituted the source of 67% of the items of information as compared to the community for 16% and the environment for 11%. The source of information for 90% of the items was considered as either very good or good.

Over 70% of the items of information were described as either very easily or easily accessible and almost 90% were used either to a large extent or to a fair extent.

Seventy-four percent of the items of information were historical in nature and 24% were expressed in statistical form.

Most of the findings on the information characteristics appear to contradict the views advanced by information system experts.

Sixty percent of the decisions were made by the superintendents with consultation and 24% were made by the school board members. Among the remaining decisions, 3% were made by the superintendents without consultation, 7% by other groups and 6% in miscellaneous forms. These findings tended to support expert opinion on the subject.

No precedent was held to exist in 73% of the

decisions, and one or two precedents from the previous twelve months existed in 12% of the cases. This high proportion of decisions made with few or no precedents may be an indication that the respondents reported decisions in the nature of those made by top-level executives, i.e., of a non-routine nature.

The mean number of days and the standard deviation of the duration of the decision-making process were equal to 50 and 73 respectively. This indicates the presence of a distribution skewed to the right and is due to the fact that in a few instances the decision-making process extended over a long period.

Eleven pairs of distributions of items of information on the statistical scale differed significantly among operational areas, seven on the individual or group decision scale, six on the source scale, five on the utilization scale, four on the recordation scale, two on the accessibility and historical scales, one on the precedent scale and in the duration of the decision-making process, and none on the source reliability scale.

It could be hypothesized that: (a) the characteristics of the information, except the source, are positively correlated, and (b) the lower degree of recordation in the area of staff is attributed to the items of information concerning staff performance.

Implications

One of the first steps in the design of a management information system is to identify the information requirements. The findings of this study suggest that special attention should be given to staff information, especially for top level decisions. Paradoxically, the information in the area of staff does not appear to be recorded to the same extent as that in the other areas, and consequently may be more difficult to include in a management information system.

On the other hand, the findings concerning the description of the information characteristics, with the exception of the statistical scale, appear to contradict most of the opinions held by a number of experts in the field of top-executive information management systems. Those opinions have been generally advanced as arguments against the use of computers in top-level decision-making. It may be premature to conclude that executives should seek to obtain the help of computers in decision-making. However, the findings suggest that the problem deserves further exploration. The lower proportion of items on the statistical scale is not in itself an obstacle to the use of computers in decision-making since alphanumeric characters can now be more and more easily handled by electronic means.

Recommendations

In view of the fact that this investigation was exploratory as well as descriptive, the recommendations that follow suggest ways to improve the methodology and provide ideas for extending the study.

Methodological changes. In research, methods are never perfect and investigators must frequently make choices which cannot be adequately evaluated until a research project is well underway. As Kaplan (1964, pp. 24-27) would suggest, if an investigator waits until the methodology is perfect before he starts on a research project, he would never get around to do it. Methodology is a continuous process which may be improved from one research project to the other.

The improvement and development of the research method should be one of the purposes of a research project, particularly in exploratory studies. Wittrock (1969) wryly points out that "as I go from paper session to symposium ..., I hear only of successfully completed studies conducted without a problem, without a complication, and with a happy ending every time [p. 5]."

In the event this investigation were repeated, it might be very useful to future investigators to be aware of the methodological problems which have been uncovered in the course of this study. The next few paragraphs are devoted to indicating what kind of methodological changes

might be made profitably in future studies of a similar nature. The suggestions pertain to the collection of the data and the content and format of the instrument.

There are two main advantages to the collection of data through a mailed questionnaire rather than through the interview technique. First, data may be collected from places distant from one another at a much more reasonable cost; second, a much greater degree of uniformity may be achieved in the administration of the instrument.

The interview technique may, on the other hand, be more appropriate than a mailed questionnaire under certain circumstances, especially if much detail is required to categorize data on a difficult scale such as the historical scale. If an investigator were interested in the latter scale he may find it preferable to use the interview technique since he could then make sure that the interviewee supplies enough detailed information to allow a more exact interpretation of the answer.

There may be another reason for collecting the data with the help of the interview technique rather than a mailed questionnaire as was done in the present study. As indicated above, a certain number of superintendents did not return the questionnaire because they felt it was too difficult to complete. Selltiz *et al.* (1959, p. 241) suggest that interviews may be preferable to questionnaires for complicated instruments. Consequently, the interview

technique may enable subsequent investigators to attain a higher proportion of participation.

If a longitudinal study were made, it might be possible to combine both techniques, using interviews in the first phase of the data collection and mailed questionnaires in subsequent phases. Alternatively, it might be preferable to use the interview technique for those answers that are open-ended (e.g., step A, part IV) and a mailed questionnaire, which could be sent to the respondent shortly after the interview, for the more highly structured parts of the instrument.

The content and format of the instrument may also be improved in the following respects.

In step B, it would be preferable to use the present tense in sub-questions a, b, and d rather than the past tense, since the past tense may prompt the respondent to list only information that has been used.

Sub-question c of step B could also be improved by defining the term "source". In a few cases, the term appears to have been understood in the sense of origin rather than the individual or group providing the information to the individual or group making the decisions. For instance, for item 8 in Table 7, which reads: "The Department of Education is interested in such a project." the source given was the department of education staff. The source could have been a staff member of the school system who was aware

of that information. Instead of asking what is the main source of information, it would be more appropriate to ask: "What individual or group provided the information to the decision-maker(s)?" The decision-maker(s) could also be added as an alternative to the different sources.

In the same sub-question Category 5 could be changed to "Other staff member (specify ...)" and Category 6 to "Superintendent or Director of Education from other school system".

Ziesel (1968, p. 48) points out that the form of the answers that must be given to a question may help to reduce greatly the number of respondents who fail to answer a question. In the present study, 19% and 13% of the respondents failed to answer questions 3.3 and part two of question 3.5 respectively. This situation could be improved by formulating question 3.3 as follows: "How long before the decision was made did the problem or event that led directly to this decision occur: (a) one day or less, (b) between one day and one week, (c) between one week and one month, (d) between one month and three months, (e) between three months and one year, (f) more than one year. The answers to the second part of question 3.5 could include the following alternatives: (a) less than 30 minutes, (b) from 30 minutes to one hour, (c) from one hour to two hours, (d) from two hours to three hours, (e) from three hours to ten hours, and (f) more than ten hours.

Question 3.6 could read as follows: "Approximately how many precedents were there in your school system in the last twelve months?": (a) none, (b) one or two, (c) three to nine, and (d) ten or more.

It may also be advisable in the first part of question 3.5 to distinguish between individual and board decisions. For instance, in the example given in Table 5 where the decision was to recommend the demolition of an old school, the respondent indicated, presumably correctly, that the decision was made by him following consultation. It is most likely that the school board eventually gave formal approval to the decision. In similar cases, some respondents considered such a decision as a school board decision.

Finally, it may help the respondents if the questionnaire included an example; for instance, the answers that could be given to such a familiar decision as whether to change an automobile or to rent or buy a house. It may not be appropriate to select an example from an educational setting since this may unduly influence the respondents.

Extension of the study. Possibilities for further research are divided into two categories: studies that could make use of the data collected in the present investigation, and studies using a different methodology and/or adding new variables to those studied in this investigation.

As mentioned in Chapter III, one superintendent

indicated that he did not want to participate in the study because he already had four or five questionnaires on his desk. Although only one of the superintendents mentioned this problem, it is possible that more than one refused to participate for the same reason. The multiplication of data collection presents obvious difficulties for educational researchers (Monahan, 1968). Part of the solution to this problem would be to make sure that research data are used to their fullest potential. It is with this goal in mind that various suggestions are made in the following paragraphs for research that could be undertaken by analyzing the data collected for the present investigation.

It would be possible, using Flanagan's method to divide each area into sub-categories. For instance, the area of staff may be subdivided into at least the following dimensions: (a) educational and non-educational staff, (b) hierarchical levels, and (c) sub-areas such as performance and qualifications. In this last sub-division, it might be valuable to analyse the distribution of items on the various characteristics, especially on the recordation scale. In view of the high proportion of items that was included in the area of staff, it might be worthwhile to make an analysis similar to that of the present investigation, dividing the operational areas into two categories only, i.e., staff and non-staff.

This investigation was focused mainly on the items of information classified into operational areas independent of the decisions made. Another approach might focus on the classification of each item according to the operational area in which the decisions were classified, as was made in the row variable of Table 33.

As explained in Chapter V, a certain number of items of information consisted of outside practices and of opinions and reactions of others on certain matters. These two aspects could also become the focus of an analysis or be added to various analyses that could be made with the data. One question could be: Are items consisting of opinions and reactions as accessible or as fully recorded as other items?

The characteristics of the information and of the decisions could also be analysed by means of factor analysis, to discover whether any characteristics cluster around one or more factors.

There are also a number of various relevant relationships which might be analyzed such as: district size and accessibility of information; district size and recordation; district size and source reliability; duration of the decision-making process and number of items required; number of hours of participation and number of items required; precedent and number of items required; precedent and recordation; precedent and source; precedent and historical

aspect; precedent and accessibility; source and source reliability; source and accessibility; source and utilization; source and method of appointment. These variables are mentioned in pairs but they could be analyzed in groups of more than two.

The phenomenon of selective perception could also be studied by relating various demographic characteristics to the items of information in each operational area within each operational area of decisions. The analysis need not be restricted to the operational area but could include various other aspects of the information.

Finally, for the purpose of cultural studies, each of the characteristics studied in this investigation could be compared by dividing the subjects into French-speaking and English-speaking groups.

In the previous paragraphs, suggestions were made relative to further research based on the data that were collected in this study. The recommendations involving an extension of the present investigation would necessitate the collection of a new set of data.

It might be worthwhile, for example, to add the following variables: the certainty and the value of the information; the evaluation of the decision in terms of such factors as quality, satisfaction, results or impact on the organization. For instance, is there any relationship between the quality of the decisions and certain aspects of

the information such as recordation, accessibility and source reliability? It might even be possible to ask each of the superintendents who participated in the study to evaluate the decisions they reported and then to re-analyse the data in terms of their answers.

Another possibility would be to compare certain aspects of decisions made in the staff area in school systems with similar decisions made in other types of organizations. This could include the comparison of various aspects of the information on items related to staff performance, such as recordation, reliability and accessibility. Such comparisons could be made in organizations employing professional and non-professional personnel. The relationship between teacher militancy and various characteristics of the staff information might also be analyzed.

Information characteristics could also be related to attitudes or behaviors of the decision-makers as measured by various instruments such as the LBDQ, or LPC.

Finally, this study was concerned mainly with important decisions made by school superintendents. Another investigation could be undertaken to analyse decisions regardless of their importance. This could probably be made by asking the respondents to list the five or ten last decisions made and then to select one at random. Further investigations could also be made at various levels

of the school organizations, including the teaching staff.

These recommendations terminate the report of this investigation. Hopefully, the study contributed to the knowledge of the information requirements. Moreover, the discussion of the problem of intersubjectivity (in the section on coding reliability) and the findings concerning the area of staff and the hypotheses derived from these findings, should suggest fruitful avenues for further research.

R E F E R E N C E S

REFERENCES

Ackoff, R. L. Management misinformation systems. *Management Science*, 1967, 14, B147-156.

Alcorn, B. K. The concept of total systems in education. In E. Haga (Ed.), *Automated educational systems*. Elmhurst, Illinois: Business Press, 1967.

Alberta Teachers' Association. Trustee criticisms of collective bargaining procedures. *The ATA Magazine*, 1964, 45(2), 118-127.

Alexis, M., & Wilson, C. Z. *Organizational decision making*. Englewood Cliffs: Prentice-Hall, 1967.

Atkinson, G., Fearing, J. L., McClintock, R. E., & Lutjemeier, J. A. (Eds.) *Project: Data use*. Unpublished manuscript, Gulf Schools Supplementary Education Center, Pearland, Texas, 1967.

Bakan, D. *On method: Toward a reconstruction of psychological investigation*. San Francisco: Jossey-Bass, 1967.

Beged-Dov, A. G. An overview of management science and information systems. *Management Science*, 1967, 13, B817-831.

Bicknell, J. E. Data processing bases for educational decision making. In G. Atkinson, J. L. Fearing, R. E. McClintock, & J. A. Lutjemeier (Eds.), *Project: data use*. Unpublished manuscript, Gulf Schools Supplementary Education Center, Pearland, Texas, 1967.

Blumenthal, S. C. *Management information systems: A framework for planning and development*. Englewood Cliffs: Prentice-Hall, 1969.

Blommers, P. J., & Lindquist, E. F. *Elementary statistical methods in psychology and education*. Boston: Houghton Mifflin, 1960.

Bourque, D. D. *Toward the development of a management information system: An empirical study of selected firms in the Douglas Fir Plywood industry*. (Doctoral dissertation, The University of Washington) Ann Arbor, Mich.: University Microfilms, 1965. No. 65-11442.

Bright, R. L. Computer applications in education. In C. S. Bumbarger, & D. Friesen (Eds.), *Focus on data processing*. The tenth annual Banff Regional Invitational Conference for School Administrators. Edmonton: The Department of Educational Administration, University of Alberta, 1968.

Cattell, R. B. The meaning and strategic use of factor analysis. In R. B. Cattell (Ed.), *Handbook of multivariate experimental psychology*. Chicago: Rand McNally, 1966.

Campbell, R. F., Corbally, J. E. Jr., & Ramseyer, J. A. *Introduction to educational administration*. Boston: Allyn and Bacon, 1966.

Clark, C. A. Hypothesis testing in relation to statistical methodology. *Review of Educational Research*, 1963, 33, 455-473.

Cook, D. *An overview of management science in educational research*. Bethesda, Md.: Educational Resources Information Center, 1968. Document No. ED025002.

Costello, T. W., & Zalkind, S. S. *Psychology in administration: A research orientation*. Englewood Cliffs: Prentice-Hall, 1963.

Crowley, W. J. Can we integrate systems without integrating management? *Journal of Data Management*, 1966, 4, 14-18, 23-24.

Culbertson, J. A., Jacobson, P. A., & Reller, T. L. *Administrative relationships: A case book*. Englewood Cliffs: Prentice-Hall, 1960.

Cyert, R. M., & March, J. G. A behavioral theory of organizational objectives. In M. Haire (Ed.), *Modern organization theory*. New York: Wiley, 1959.

Cyert, R. M., & March, J. G. *A behavioral theory of the firm*. Englewood Cliffs: Prentice-Hall, 1963.

Davitz, J. R., & Davitz, L. J. *A guide for evaluating research plans in psychology and education*. New York: Teachers College Press, 1967.

Dearborn, D. W. C., & Simon, H. A. Selective perception: A note on the departmental identifications of executives. *Sociometry*, 1958, 21, 140-144.

Dearden, J. Computers and profit centers. In C. A. Myers (Ed.), *The Impact of computers on management*. Cambridge: MIT Press, 1967.

Dill, W. R. Decision-making. In D. E. Griffiths (Ed.), *Behavioral science and educational administration*. The sixty-third yearbook of the National Society for the Study of Education. Chicago: The University of Chicago Press, 1964.

Eilon, S. Some notes on information processing. *Journal of Management Studies*, 1968, 5, 139-153.

Emory, W., & Niland, P. *Making management decisions*. Boston: Houghton Mifflin, 1968.

Etzioni, A. *Modern organizations*. Englewood Cliffs: Prentice-Hall, 1964.

Farner, F. Data processing and problem solving in educational administration. In C. S. Bumbarger & D. Friesen (Eds.), *Focus on data processing*. The tenth annual Banff Regional Invitational Conference for School Administrators. Edmonton: The Department of Educational Administration, University of Alberta, 1968.

Fish, R. S. The task of educational administration. In W. G. Hack, J. A. Ramseyer, W. J. Gephart, & J. B. Heck (Eds.), *Educational administration: Selected readings*. Boston: Allyn and Bacon, 1965.

Flanagan, J. C. The critical incident technique. *Psychological Bulletin*, 1954, 51, 327-358.

Forrester, J. W. Comments on the conference discussion. In C. A. Myers (Ed.), *The Impact of computers on management*. Cambridge: MIT Press, 1967.

Frey, S. H., & Getschman, K. R. (Eds.), *School administration: Selected readings*. New York: Crowell, 1968.

Glaser, E. Information technology: Relationship to management decision models. In J. M. Houkes (Ed.), *Management information systems and the information specialist*. Lafayette: Krannert Graduate School of Industrial Administration, 1966.

Goodlad, J. I., O'Toole, J. F. Jr., & Tyler, L. L. *Computers and information systems in education*. New York: Harcourt, Brace & World, 1966.

Griffiths, D. E. *Administrative Theory*. New York: Appleton-Century-Crofts, 1959.

Head, R. V. Management information systems: A critical appraisal. *Datamation*, 1967, 13, 22-27.

Hill, H. L. *Explorations in administrative decision-making*. (Doctoral dissertation, University of Southern California) Ann Arbor, Mich.: University Microfilms, 1964. No. 64-12461.

Holdaway, E. A. An analysis of the verbal moves in school board meeting interaction. Unpublished doctoral dissertation, University of Alberta, 1968.

Kaplan, A. *The conduct of inquiry: Methodology for behavioral science*. San Francisco: Chandler, 1964.

Katz, D., & Kahn, R. L. *The social psychology of organizations*. New York: Wiley, 1966.

Klahr, D., & Leavitt, H. J. Tasks, organization structures, and computer programs. In C. A. Myers (Ed.), *The impact of computers on management*. Cambridge: MIT Press, 1967.

Leavitt, H. J. Discussion. In C. A. Myers (Ed.), *The impact of computers on management*. Cambridge: MIT Press, 1967.

Lehmann, H. The systems approach to education. *Audiovisual Instruction*, 1968, 13, 144-148.

Leu, D. J. Towards adequate educational and socio-cultural data for continuous educational planning in large school districts. In W. C. Manahan (Ed.), *Research and data problems in big-city schools*.Iowa: Iowa Center for Research in School Administration, The University of Iowa, 1968.

Li, D. H. *Accounting, computers, management information systems*. New York: McGraw-Hill, 1968.

Lindquist, E. F., Marker, R. W., & Van Dusseldorp, R. A. *Education information project*. Bethesda, Md.: Educational Resources Information Center, 1966. Order Document No. ED 010033.

McCarthy, J. Information. *Scientific American*. Reprint of the September 1966 issue, 1-16.

Maertz, S. G. An Analysis of school board decisions in selected Alberta divisions and counties. Unpublished master's thesis, University of Alberta, 1966.

Maier, N. R. F. *Problem-solving discussions and conferences*. New York: McGraw-Hill, 1963.

Marker, R. W., & McGraw, P. P. Gaps in educational information systems. In D. D. Bushnell & D. W. Allen (Eds.), *The computer in American education*. New York: Wiley, 1967.

Monahan, W. G. (Ed.). *Research and data problems in big-city schools*. Iowa: Iowa Center for Research in School Administration, The University of Iowa, 1968.

Nadler, G. *Work systems design: The IDEALS concept.* Homewood: Irwin, 1967.

Neagley, R. L., & Evans, N. J. *Handbook for effective curriculum development.* Englewood Cliffs: Prentice-Hall, 1967.

Nunnally, J. The place of statistics in psychology. *Education and Psychological Measurements,* 1960, 20, 641-650.

Pfeiffer, J. *New look at education: Systems analysis in our schools and colleges.* Poughkeepsie: Odyssey Press, 1968.

Prince, T. R. *Information systems for management planning and control.* Homewood: Irwin, 1966.

Reeder, W. G. *The fundamentals of public school administration.* New York: MacMillan, 1951.

Saunders, R. L., Phillips, R. C., & Johnson, H. J. *A theory of educational leadership.* Columbus: Merrill Books, 1966.

Selltiz, C., Jahoda, M., Deutsch, M., & Cook, S. W. *Research methods in social relations.* New York: Holt, Rinehart and Winston, 1959.

Shuford, Jr., E. H. A computer-based system for aiding decision-making. In J. Spiegel & D. Walker (Eds.), *Second congress on the information system sciences.* Washington: Spartan, 1965.

Siegel, S. *Nonparametric statistics for the behavioral sciences.* New York: McGraw-Hill, 1956.

Simon, H. A. *Administrative behavior; a study of decision-making processes in administrative behavior.* (2nd ed.) New York: MacMillan, 1957.

Simon, H. A. *The shape of automation for men and management.* New York: Harper, 1965.

Sollenberger, H. *Major changes caused by the implementation of a management information system.* (Doctoral dissertation, University of Indiana) Ann Arbor, Mich.: University Microfilms, 1967. No. 67-13186.

Sprague, R. E. The browsing era. *Business Automation,* 1967, 14, 52-55, 70.

Stern, H. (Ed.). Information systems in management science. *Management Science*, 1967, 13, B848-51.

Stevens, S. S. Mathematics, measurement, and psychophysics. In S. S. Stevens (Ed.), *Handbook of experimental psychology*. New York: Wiley, 1951.

Tannenbaum, R. & Massarik, F. Sharing decision-making with subordinates. In R. Dubin (Ed.), *Human relations in administration*. (2nd ed.) Englewood Cliffs: Prentice-Hall, 1961.

Travers, R. M. W. *An introduction to educational research*. (1st, 2nd, & 3rd Eds.) New York: MacMillan, 1958, 1964, & 1969.

Trull, S. G. Some factors involved in determining total decision success. *Management Science*, 1966, 12, B270-80.

Van Dusseldorp, R. A. The systems approach. *NEA Journal*, 1967, 56, 24-26.

Webster's new world dictionary, college edition. Toronto: Nelson, Foster and Scott, 1966.

Wittrock, M. C. Dirty data points: The case of the missing research equipment. *Educational Researcher*, 1969, 20(9), 5-7.

Woollatt, L. H. An automated statewide information system. In E. Haga (Ed.), *Automated educational systems*. Elmhurst, Illinois: Business Press, 1967.

Yovits, M. C., & Ernst, R. L. Generalized information systems. In A. Kent, O. E. Taulbee, J. Belzer, & G. D. Goldstein (Eds.), *Electronic handling of information: Testing and evaluation*. Washington: Thompson, 1967.

Ziegler, W. J. *The bases and process for decision-making by the superintendent of schools*. (Doctoral dissertation, University of Southern California) Ann Arbor, Mich.: University Microfilms, 1964. No. 64-13541.

Zeisel, H. *Say it with figures*. (5th ed.) New York: Harper & Row, 1968.

A P P E N D I X A

Questionnaire

QUESTIONNAIRE ON DECISION MAKING AND INFORMATION

PART 1 : SCHOOL SYSTEM CHARACTERISTICS
(District, County, Division, Unit or Area)

1.1 Name of the system .....

1.2 Number of students for the year 1968-69 :

1. ☐ fewer than 5,000.
2. ☐ 5,000 to 9,999.
3. ☐ 10,000 to 19,999.
4. ☐ 20,000 to 29,999.
5. ☐ 30,000 to 44,999.
6. ☐ 45,000 to 59,999.
7. ☐ 60,000 to 74,999.
8. ☐ 75,000 to 99,999.
9. ☐ 100,000 and more.

1.3 Percentage of students in the system at the elementary level:

1. ☐ fewer than 11%.
2. ☐ 11% to 90%.
3. ☐ 91% to 100%.

1.4 Percentage of students in the system living in rural communities:

0. ☐ fewer than 11 %.
1. ☐ 11 % to 20 %.
2. ☐ 21 % to 30 %.
3. ☐ 31 % to 40 %.
4. ☐ 41 % to 50 %.
5. ☐ 51 % to 60 %.
6. ☐ 61 % to 70 %.
7. ☐ 71 % to 80 %.
8. ☐ 81 % to 90 %.
9. ☐ 91 % to 100 %.

PART II : INDIVIDUAL CHARACTERISTICS

2.1 Age of respondent .....

2.2 Number of years associated with education (except as a student) : ..... .

2.3 Number of years as superintendent or director of education:

(a) in the present system ..... .

(b) in other systems .....

2.4 Method of appointment as superintendent or director of education:

1. ☐ by the Department of Education.
2. ☐ by School Board Members.
3. ☐ Other (specify) .....

2.5 Previous positions:

(a) **As Teacher**: Indicate at which level and in which subject area you spent the major part of your teaching career.

Level: 1. ☐ Elementary
2. ☐ Secondary
3. ☐ Other (specify) .....

Area: 1. ☐ Arts and humanities
2. ☐ Mathematics and Science
3. ☐ Vocational and Technical
4. ☐ Business Education
5. ☐ Other (specify) .....

(b) **As Principal :**

Level	No. of Years
.....	.....
.....	.....

(c) **Other Positions,** if any, held for at least two years.

Position	No. of Years
.....	.....
.....	.....
.....	.....

2.6 Number of years of formal education beyond grade eleven .....

The remaining questions will be related to an important decision made **within the last seven days**.

The term "decision" is here defined as the act of making a choice, whatever it is. Thus, choosing not to act is also considered a decision.

Make sure that the decision selected was made within the last seven days, even if you feel that this decision is not as important as others made in previous weeks. If you hesitate between two or more decisions, select one on a random basis.

3.1 Describe the most important decision you made, or in which you participated, **within the last seven days.**

.....

.....

3.2 In which category would you classify this decision?

1. ☐ Students
2. ☐ Staff
3. ☐ Finance
4. ☐ Facilities
5. ☐ Curriculum
6. ☐ Community

3.3 When did the problem or event that led directly to this decision occur? Give the exact date if possible. .....

3.4 When was this decision made? .....

3.5 How was this decision made?

1. ☐ by you without consultation.
2. ☐ by you with consultation. If so, how long was the consultation (specify in hours and/or minutes). .....
3. ☐ by the school board with your participation. If so, how long did you participate (specify in hours and/or minutes). .....
4. ☐ by another group with your participation. If so, how long did you participate (specify in hours and/or minutes). .....
5. ☐ other (specify, by whom and how long was the consultation and/or participation). .....

.....

.....

3.6 Was this decision based on a precedent?

1. ☐ Yes. **Approximately** how many precedents were there in the last twelve months? .....
2. ☐ No.

This last part of the questionnaire includes two steps.

STEP A. List each item of information that was or would have been of value in making the decision, stated in 3.1 above, whether this information was used or not, was accessible or not, or was withheld by some individual or not.

STEP B. Complete the four sub-questions for each of the items of information in Step A. Make one check per sub-question to whichever alternative is most closely related to the actual situation.

Information is here defined as data of value in decision making. Data are things known or assumed; facts or figures from which conclusions can be drawn.

It is understood that for some decisions the items of information may be limited to a few and in others they may be numerous. If the decision you selected involves only a few items, merely use the number of questions required and leave the remaining blank. If there are many, please limit yourself to the fifteen items you feel have been or would have been most valuable in making the decision, relying mainly on your first opinion.

It is **not necessary** to list the information items in any particular order.

STEP A. — Describe, briefly, one item of information ....

....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify ....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

---

STEP A. — Describe, briefly, one item of information ....

....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify ....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

---

STEP A. — Describe, briefly, one item of information ....

....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify ....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

STEP A. — Describe, briefly, one item of information . 150

.....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify .....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

STEP A. — Describe, briefly, one item of information .....

.....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify .....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
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STEP A. — Describe, briefly, one item of information .....

.....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
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(b) To what extent was the information **written** or **recorded**?
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4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify .....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
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STEP A. — Describe, briefly, one item of information ....

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STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
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4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify ....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

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STEP A. — Describe, briefly, one item of information ....

....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

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4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify ....)

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1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
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STEP A. — Describe, briefly, one item of information ....

....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify ....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

STEP A. — Describe, briefly, one item of information .....152.....

.....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

(c) **Main source** of information: 1. ☐ School trustee 2. ☐ Parent 3. ☐ Principal
4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify .....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

STEP A. — Describe, briefly, one item of information .....

.....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

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4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
8. ☐ Department of education staff 9. ☐ Other (specify .....)

(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

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1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

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4. ☐ Teacher 5. ☐ Central office staff 6. ☐ Other superintendent 7. ☐ Consulting firm
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(d) What was the **reliability** of this source?
1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

STEP A. — Describe, briefly, one item of information .....153.....

.....

STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
1. ☐ Very easily 2. ☐ Easily 3. ☐ With some difficulty 4. ☐ With great difficulty

(b) To what extent was the information **written** or **recorded**?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

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STEP A. — Describe, briefly, one item of information .....

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(a) How **accessible** was this information?
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STEP A. — Describe, briefly, one item of information .....

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STEP B. — Make **only one check** per sub-question.

(a) How **accessible** was this information?
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1. ☐ Very good 2. ☐ Good 3. ☐ Poor 4. ☐ Very poor 5. ☐ Unknown

(e) To what extent was this information **used** in reaching the decision stated in 3.1 above?
1. ☐ To a large extent 2. ☐ To a fair extent 3. ☐ To a small extent 4. ☐ Not at all

QUESTIONNAIRE RELATIF À LA PRISE DE DÉCISION ET À L'INFORMATION

Première partie: CARACTÉRISTIQUES DE LA COMMISSION SCOLAIRE

1.1 Nom de la commission scolaire .....

1.2 Nombre d'étudiants inscrits au cours de l'année 1968-69:

1. ☐ moins de 5,000.
2. ☐ 5,000 à 9,999.
3. ☐ 10,000 à 19,999.
4. ☐ 20,000 à 29,999.
5. ☐ 30,000 à 44,999.
6. ☐ 45,000 à 59,999.
7. ☐ 60,000 à 74,999.
8. ☐ 75,000 à 99,999.
9. ☐ 100,000 et plus

1.3 Pourcentage d'étudiants au niveau élémentaire:

1. ☐ moins de 11 %.
2. ☐ 11 % à 90 %.
3. ☐ 91 % à 100 %.

1.4 Pourcentage d'étudiants demeurant dans un milieu rural:

0. ☐ moins de 11 %.
1. ☐ 11 % à 20 %.
2. ☐ 21 % à 30 %.
3. ☐ 31 % à 40 %.
4. ☐ 41 % à 50 %.
5. ☐ 51 % à 60 %.
6. ☐ 61 % à 70 %.
7. ☐ 71 % à 80 %.
8. ☐ 81 % à 90 %.
9. ☐ 91 % à 100 %.

Deuxième partie: CARACTÉRISTIQUES INDIVIDUELLES

2.1 Age du répondant .....

2.2 Nombre d'années d'expérience dans le domaine de l'éducation (sauf comme étudiant): .....

2.3 Nombre d'années d'expérience comme directeur général à l'emploi

(a) de la présente commission scolaire .....

(b) d'autres commissions scolaires .....

2.4 Mode de nomination comme directeur général

1. ☐ par le ministère de l'Education
2. ☐ par les commissaires d'écoles
3. ☐ autrement (préciser .....)

2.5 Fonctions antérieures:

(a) **Enseignement**: Indiquer le niveau et le domaine auxquels vous avez consacré le plus d'années à titre d'enseignant.

Niveau:
1. ☐ Elémentaire
2. ☐ Secondaire
3. ☐ Autre (préciser .....)

Domaine:
1. ☐ Arts et humanités
2. ☐ Mathématiques et sciences
3. ☐ Technique et professionnel
4. ☐ Commercial
5. ☐ Autre (préciser .....)

(b) **Direction d'école**:

Niveau	Nombre d'années
.....	.....
.....	.....

(c) **Autres postes** occupés durant une période d'au moins deux ans:

Fonction	Nombre d'années
.....	.....
.....	.....

2.6 Nombre d'années de scolarité au-delà de la onzième année .....

Troisième partie: CARACTÉRISTIQUES D'UNE DÉCISION

Les questions qui suivent ont trait à une décision importante prise **au cours des sept derniers jours**.

Le terme "décision", pour les fins du présent questionnaire, signifie "faire un choix quelconque". En conséquence, choisir de ne pas agir doit être considéré comme une décision.

Veuillez vous assurer que la décision en question a été prise au cours des sept derniers jours, même si vous avez l'impression que cette décision n'est pas aussi importante que d'autres prises au cours des semaines précédentes. Si vous hésitez à choisir entre deux décisions ou plus, veuillez simplement faire un choix au hasard entre ces décisions.

3.1 Quelle est la décision la plus importante que vous avez prise ou à laquelle vous avez participé **au cours des sept derniers jours**. (La décrire brièvement).

.....

.....

3.2 Dans quelle catégorie placeriez-vous cette décision?

1. ☐ Etudiants
2. ☐ Personnel enseignant ou autre
3. ☐ Financement
4. ☐ Bâtiments et équipement
5. ☐ Programme scolaire
6. ☐ Collectivité

3.3 A quel moment se situe le problème ou l'événement qui fut directement à l'origine de cette décision? Si possible, indiquer la date précise. .....

3.4 Quand la décision fut-elle prise? .....

3.5 Comment cette décision fut-elle prise?

1. ☐ par vous sans consultation.
2. ☐ par vous avec consultation. Si oui, combien de temps dura la consultation (préciser le nombre d'heures et/ou de minutes) .....
3. ☐ par la commission scolaire avec votre participation. Si oui, combien de temps dura votre participation (préciser le nombre d'heures et/ou de minutes) .....
4. ☐ par un autre groupe avec votre participation. Si oui, combien de temps dura votre participation (préciser le nombre d'heures et/ou de minutes) .....
5. ☐ autrement (préciser par qui et combien de temps dura la consultation et/ou la participation) .....

.....

.....

3.6 Cette décision fut-elle basée sur un précédent?

1. ☐ Oui. Combien y a-t-il eu de précédents **approximativement**, durant les douze derniers mois. .....
2. ☐ Non.

Quatrième partie: CARACTERISTIQUES DE L'INFORMATION

Cette dernière partie du questionnaire comporte deux étapes.

ETAPE A: indiquer chaque [redacted] d'information qui était ou aurait été utile pour prendre la décision indiquée à l'item 3.1 ci-dessus, et ceci indépendamment du fait que l'information ait été utilisée ou non, ait été accessible ou non, ou ait été retenue ou non par quelqu'individu.

ETAPE B: remplir les quatre sous-questions pour chaque [redacted] d'information indiquée à l'étape A. Ne faire qu'un seul choix par sous-question indiquant l'alternative qui décrit le mieux la situation donnée.

Aux fins du questionnaire, le terme ''information'' signifie toute chose connue ou supposée, tout fait ou chiffre, utile pour la prise de décision.

Veuillez remarquer que pour certaines décisions, le nombre d'unités d'information peut être restreint, pour d'autres, il peut être élevé. Si la décision que vous avez choisie se classe dans le premier cas, n'utiliser que le nombre de cases requises, laissant les autres en blanc. Dans l'autre cas, veuillez vous limiter aux quinze unités d'information qui, selon vous, étaient ou auraient été le plus utile pour prendre cette décision, en vous fiant principalement à votre première impression.

Il n'est pas nécessaire d'énumérer les unités d'information dans un ordre particulier.

ETAPE A. – Décrire brièvement une [redacted] information .....

.....

ETAPE B. – Indiquer **un seul choix** par sous-question.

(a) Dans quelle mesure cette information était-elle **accessible?**

1. ☐ Très facilement 2. ☐ Facilement 3. ☐ Difficilement 4. ☐ Très difficilement.

(b) Dans quelle mesure l'information était-elle **consignée ou écrite?**

1. ☐ Dans une très grande mesure 2. ☐ Plus ou moins 3. ☐ Pas beaucoup 4. ☐ Pas du tout

(c) Quelle était la **principale source** d'information: 1. ☐ Commissaire d'écoles 2. ☐ Parent 3. ☐ Directeur d'école

4. ☐ Enseignant 5. ☐ Membre du personnel administratif de la commission scolaire

6. ☐ Autre directeur général 7. ☐ Expert conseil 8. ☐ Membre du personnel du ministère de l'Education

9. ☐ Autre source (préciser .....)

(d) Quelle était la **véracité** de cette source?

1. ☐ Très bonne 2. ☐ Bonne 3. ☐ Mauvaise 4. ☐ Très mauvaise 5. ☐ Inconnue

(e) Dans quelle mesure cette information a-t-elle été utilisée pour prendre la décision indiquée à l'item 3.1 ci-dessus?

1. ☐ Dans une très grande mesure 2. ☐ Plus ou moins 3. ☐ Pas beaucoup 4. ☐ Pas du tout

ETAPE A. – Décrire brièvement une [redacted] information.....

.....

ETAPE B. – Indiquer **un seul choix** par sous-question.

(a) Dans quelle mesure cette information était-elle **accessible?**

1. ☐ Très facilement 2. ☐ Facilement 3. ☐ Difficilement 4. ☐ Très difficilement

(b) Dans quelle mesure l'information était-elle **consignée ou écrite?**

1. ☐ Dans une très grande mesure 2. ☐ Plus ou moins 3. ☐ Pas beaucoup ☐ Pas du tout

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9. ☐ Autre source (préciser .....)

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ETAPE A. – Décrire brièvement une [redacted] information.....

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ETAPE B. – Indiquer **un seul choix** par sous-question.

(a) Dans quelle mesure cette information était-elle **accessible?**

1. ☐ Très facilement 2. ☐ Facilement 3. ☐ Difficilement 4. ☐ Très difficilement

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ETAPE A. – Décrire brièvement une [redacted] information .....

.....

ETAPE B. – Indiquer **un seul choix** par sous-question.

(a) Dans quelle mesure cette information était-elle **accessible**?

1. ☐ Très facilement 2. ☐ Facilement 3. ☐ Difficilement 4. ☐ Très difficilement.

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1. ☐ Dans une très grande mesure 2. ☐ Plus ou moins 3. ☐ Pas beaucoup 4. ☐ Pas du tout

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4. ☐ Enseignant 5. ☐ Membre du personnel administratif de la commission scolaire

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ETAPE A. – Décrire brièvement une [redacted] information .....

.....

ETAPE B. – Indiquer **un seul choix** par sous-question.

(a) Dans quelle mesure cette information était-elle **accessible**?

1. ☐ Très facilement 2. ☐ Facilement 3. ☐ Difficilement 4. ☐ Très difficilement

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ETAPE A. – Décrire brièvement une [redacted] information .....

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ETAPE B. – Indiquer **un seul choix** par sous-question.

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(b) Dans quelle mesure l'information était-elle **consignée ou écrite**?

1. ☐ Dans une très grande mesure 2. ☐ Plus ou moins 3. ☐ Pas beaucoup 4. ☐ Pas du tout

(c) Quelle était la **principale source** d'information: 1. ☐ Commissaire d'école 2. ☐ Parent 3. ☐ Directeur d'école

4. ☐ Enseignant 5. ☐ Membre du personnel administratif de la commission scolaire

6. ☐ Autre directeur général 7. ☐ Expert conseil 8. ☐ Membre du personnel du ministère de l'Education

9. ☐ Autre source (préciser .....)

(d) Quelle était la **véracité** de cette source?

1. ☐ Très bonne 2. ☐ Bonne 3. ☐ Mauvaise 4. ☐ Très mauvaise 5. ☐ Inconnue

(e) Dans quelle mesure cette information a-t-elle été utilisée pour prendre la décision indiquée à l'item 3.1 ci-dessus?

1. ☐ Dans une très grande mesure 2. ☐ Plus ou moins 3. ☐ Pas beaucoup 4. ☐ Pas du tout

ETAPE A. – Décrire brièvement une [redacted] information ..... 160 .....

.....

ETAPE B. – Indiquer **un seul choix** par sous-question.

(a) Dans quelle mesure cette information était-elle **accessible**?

1. ☐ Très facilement 2. ☐ Facilement 3. ☐ Difficilement 4. ☐ Très difficilement.

(b) Dans quelle mesure l'information était-elle **consignée ou écrite**?

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ETAPE A. – Décrire brièvement une [redacted] information .....

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A P P E N D I X B

Letters and Wires to Superintendents

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

August 25th, 1969.

Dear Sir,

I am presently working on a thesis concerning the information required by school superintendents (or those holding equivalent positions) to make decisions. The research design includes the completion of a questionnaire regarding decisions made by the respondents.

It takes approximately forty minutes to complete the questionnaire. It would be sent on two different occasions: the first one during the month of September or later and the second one during the month of November or later. I personally guarantee that the usual professional ethic of treating the answers confidentially will be strictly observed.

Your cooperation would be extremely valuable in my undertaking of this project. I should, therefore, appreciate your letting me know, by the enclosed card, if it will be possible to devote a portion of your time to this end.

If you wish, I should be pleased to send you a summary of the findings.

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

le 25 août 1969

Cher Monsieur,

Je prépare actuellement une thèse ayant trait à l'information requise par les directeurs généraux des écoles (ou ceux qui détiennent une fonction équivalente) pour la prise de décisions. La méthodologie comporte l'analyse de données obtenues au moyen d'un questionnaire.

Il faut quarante minutes pour remplir le questionnaire, lequel sera envoyé à deux reprises, la première fois durant ou après le mois de septembre, la deuxième fois, durant ou après le mois de novembre. Les renseignements obtenus seront traités confidentiellement, selon les normes habituelles de l'éthique professionnelle.

Votre collaboration dans ce projet de recherche me serait fort utile. Vous trouverez sous ce pli une carte de réponse à ce sujet. Auriez-vous l'obligeance de m'indiquer sur cette carte si vous pouvez consacrer une partie de votre temps à la réalisation de ce projet.

Si vous le désirez, je serais heureux de vous faire parvenir un résumé des résultats de la recherche.

Veuillez agréer, cher monsieur, l'expression de mes sentiments les meilleurs.

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

September 10, 1969.

Dear Sir:

On August 25th, 1969, I wrote to you soliciting your cooperation on a research project, however, I have not yet received any reply. Perhaps you were away or the letter did not reach you. I am, therefore, sending another copy of the original letter and I should be much obliged if you would complete and return the enclosed reply card at your earliest convenience.

May I thank you in advance for your kind cooperation.

Yours truly,

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Le 10 septembre 1969.

Cher Monsieur,

A ce jour, je n'ai reçu aucune réponse à ma lettre du 25 août dernier, dans laquelle je sollicitais votre collaboration à un projet de recherche. Peut-être étiez-vous en vacances, ou peut-être la lettre ne vous est-elle pas parvenue? Je vous envoie donc sous ce pli une copie de la lettre et je vous serais très obligé si vous pouviez remplir et me retourner la carte ci-incluse, quelle que soit votre décision.

Je vous remercie à l'avance et je vous prie d'agréer, cher Monsieur, l'expression de mes sentiments les meilleurs.

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Dear Sir:

Further to my letter of August 25th, 1969, I am enclosing a questionnaire on Decision Making and Information Requirements.

As mentioned in my introductory letter, I personally guarantee that the usual professional ethic of treating the answers confidentially will be strictly observed. It takes approximately forty minutes to complete the questionnaire, although it may take more or less time depending on the situation. Please note that the survey will be conducted only once, instead of twice as I mentioned in my letter of August 25th.

The question in Parts III and IV are preceded by short instructions explaining the content of the questions. Please make sure that you fully understand these instructions.

The alternatives that may be given to the questions do not describe either good or bad practices. For example, with reference to question 3.5, some experts feel that decisions should be made individually, others by groups. A single solution cannot be given to this problem since various circumstances require different approaches. Consequently, try to describe the actual situation, to the best of your knowledge, without reference to any value judgement.

Yours very truly,

Roger A. Cormier

Encl.
RAC'bb

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Cher Monsieur,

Pour faire suite à ma lettre du 25 août dernier vous trouverez sous ce pli un questionnaire relatif à la prise de décision et à l'information.

Tel que mentionné dans ma lettre d'introduction les renseignements obtenus seront traités confidentiellement, selon les normes habituelles de l'éthique professionnelle. Il faut environ quarante minutes pour remplir le questionnaire, quoi que cette période puisse être plus ou moins longue selon les circonstances. Veuillez noter que le questionnaire ne vous sera envoyé qu'une seule fois et non pas deux fois comme je l'indiquais dans ma lettre du 25 août.

Les questions dans les troisième et quatrième parties sont précédées de courtes directives. Auriez-vous l'obligeance de vous assurer que vous comprenez très bien ces directives.

Aucune réponse dans le questionnaire n'est en soi bonne ou mauvaise. Par exemple, à la question 3.5, les décisions, selon certains experts en la matière, doivent être prises individuellement, et selon d'autres experts, en groupe. De fait, il n'y a pas de solution générale à ce problème car chaque cas doit être décidé individuellement. Veuillez donc décrire la situation au meilleur de votre connaissance, telle qu'elle se présente, sans référer à quelque jugement de valeur que ce soit.

Je vous remercie à l'avance de votre contribution et je vous prie d'agréer, cher Monsieur, l'expression de mes sentiments les meilleurs.

Roger A. Cormier

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Dear Sir:

I recently sent you a questionnaire on Decision-Making and Information. I realize how busy a school superintendent or a director of education is: however, I should sincerely appreciate your completing the questionnaire at your earliest convenience. A pilot study has shown that it takes approximately forty minutes to do so.

If you have returned the questionnaire in the past few days, please disregard this letter and accept by sincerest thanks.

Yours truly,

Roger A. Cormier

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Cher Monsieur,

Récemment, je vous ai fait parvenir un questionnaire relatif à la prise de décision et à l'information. Il est fort probable que de nombreuses occupations vous aient empêché d'y porter attention. Cependant, je vous serais très reconnaissant si vous pouviez y consacrer environ quarante minutes de votre temps dans les prochains jours.

Si vous avez déjà retourné le questionnaire, veuillez ignorer cette lettre et accepter mes plus sincères remerciements.

Veuillez agréer, cher monsieur, l'expression de mes sentiments les meilleurs.

Roger A. Cormier

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Dear Sir:

I note, with regret, that I have not yet received the completed questionnaire on Decision-Making and Information which I sent you some time ago.

This research project was undertaken following the generally favorable response to my letter of August 25th in which I sought your cooperation in the project. I would therefore assume that you are still willing to complete and return the questionnaire.

A copy of the questionnaire and the accompanying letter are enclosed in case it did not reach you.

May I thank you in advance for your forthcoming cooperation.

Yours truly,

Roger A. Cormier

Encl.
RAC'bb

FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL
ADMINISTRATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Cher monsieur,

Je constate avec regret que je n'ai pas reçu le questionnaire relatif à la prise de décision et à l'information que je vous ai transmis il y a quelque temps.

Les nombreuses réponses affirmatives à ma lettre du 25 août dernier, dans laquelle je vous demandais de collaborer au projet de recherche, m'ont encouragé à poursuivre cette entreprise. J'ai donc bon espoir que vous êtes toujours disposé à remplir et retourner le questionnaire.

Vous trouverez sous ce pli une copie du questionnaire et une copie de la lettre qui l'accompagnait, au cas où ces documents ne vous soient pas parvenus.

Je vous remercie à l'avance de votre contribution et je vous prie, cher monsieur, d'agréer l'expression de mes sentiments les meilleurs.

Roger A. Cormier

JANUARY 20 TH, 1970.

HAVE NOT RECEIVED QUESTIONNAIRE ON DECISION MAKING AND INFORMATION STOP YOUR ASSISTANCE OFFERED LAST SEPTEMBER STILL MUCH NEEDED STOP EXTRA COPY OF QUESTIONNAIRE SENT OUT TO DAY STOP PLEASE SELECT A RECENT DECISION WHEN COMPLETING QUESTIONNAIRE STOP THANK YOU

ROGER A. CORMIER

EDUCATIONAL ADMINISTRATION
UNIVERSITY OF ALBERTA

20 JANVIER 1970

N'AI PAS RECU QUESTIONNAIRE RELATIF A PRISE DE DECISION ET INFORMATION STOP AIDE GENEREUSEMENT OFFERTE EN SEPTEMBRE TOUJOURS ESSENTIELLE STOP COPIE ADDITIONNELLE DU QUESTIONNAIRE POSTE AU JOUR D'HUI STOP VEUILLEZ CHOISIR UNE DECISION TOUT A FAIT RECENTE EN REMPLISSANT LE QUESTIONNAIRE STOP MERCI

ROGER A. CORMIER

ADMINISTRATION SCOLAIRE
UNIVERSITE DE L'ALBERTA

A P P E N D I X C

Instructions to Coders

All items should be classified in one category or the other to the best of your ability. If one respondent does not give much details, interpretation of the item may be made with the help of answers given to Part III, to other items, or to other sub-questions in the same item (e.g. source).

After one-third of the items have been classified, re-read the whole text* over and review your coding only if you feel it is necessary.

Sometimes, the respondents use the past tense because they refer to decisions already taken. However, the use of the past tense does not mean that the items should be considered as historical since superintendents may be referring in some cases to information that was not known at the beginning of the decision-making process.

Always follow the guide lines, or what they suggest. In case of doubt, ask yourself in which file you would enter the item.

When coding the decision, block the respondent's coding not to be influenced by such coding.

Special attention should be given to the note at bottom of Table 4.

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*First draft of the text, from pages 35 to 42.